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MEASUREMENTS OF A MACH 4.9 ZERO-PRESSURE-  
GRADIENT TURBULENT BOUNDARY LAYER WITH  
HEAT TRANSFER. PART 1, DATA COMPILATION

Robert L. P. Voisinet, et al

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27 September 1972

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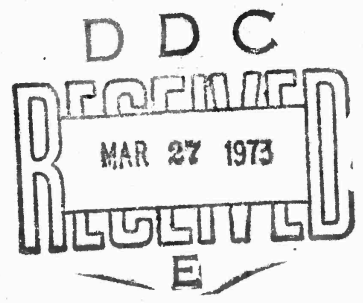
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MEASUREMENTS OF A MACH 4.9 ZERO-  
PRESSURE-GRADIENT TURBULENT BOUNDARY  
LAYER WITH HEAT TRANSFER  
PART 1 - DATA COMPILATION

By  
Robert L. P. Voisinet  
Roland E. Lee

27 SEPTEMBER 1972



**NOL**

NAVAL ORDNANCE LABORATORY, WHITE OAK, SILVER SPRING, MARYLAND

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PART I - DATA COMPILATION

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Silver Spring, Maryland

NOLTR 72-232

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MEASUREMENTS OF A MACH 4.9 ZERO-PRESSURE-GRADIENT TURBULENT BOUNDARY  
LAYER WITH HEAT TRANSFER PART I - DATA COMPILATION

This report documents data obtained in an extensive investigation of a two-dimensional turbulent boundary layer at Mach 4.9 for a range of heat-transfer conditions.

This work was performed under the sponsorship of the Naval Air Systems Command, Task No. A32 320/292/69 R009-02-030 with Mr. W. C. Volz as project monitor.

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ROBERT WILLIAMSON II  
Captain, USN

*L. H. Schindel*  
L. H. SCHINDEL  
By direction

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List of Symbols

$C_f$	local skin-friction coefficient
$M$	Mach number
$P$	pressure
$P_s$	static pressure
$P_{t2}$	Pitot pressure
$Pr$	Prandtl number
$\dot{q}$	local wall heat-transfer rate
$r$	recovery factor
$Re_\theta$	momentum thickness Reynolds number
$St$	Stanton number
$T$	temperature
$u$	velocity
$u_\tau$	shear velocity = $\sqrt{\tau_w/\rho_w}$
$u^*$	transformed velocity in the law-of-the-wall correlation (see reference 10)
$x$	distance along plate from nozzle throat
$y$	distance normal to plate
$\delta$	boundary-layer thickness
$\delta^*$	displacement thickness
$\theta$	momentum thickness
$\theta_E$	energy thickness
$\theta_H$	total enthalpy thickness
$\mu$	viscosity
$\nu$	kinematic viscosity
$\rho$	density
$\tau$	shear stress
<b>Subscripts</b>	
$aw$	adiabatic-wall conditions
$e$	free-stream conditions
$o$	tunnel supply conditions
$w$	wall conditions
$t$	stagnation conditions
<b>Superscripts</b>	
$'$	"ideal" properties calculated from $P_s$ , $P_o$ , and $T_o$ (see pages 5 and 6)



## INTRODUCTION

Since the prediction of compressible turbulent boundary-layer flows is often based on some empirical formulation, it is understandable that there is a need for complete and detailed experimental data upon which new theories can be tested. Although a fair number of experimental zero-pressure-gradient studies have been reported in the past, only a limited number of these studies present data of the accuracy or completeness necessary for analytical and numerical evaluation. For this reason, the experimental approach at the Naval Ordnance Laboratory (NOL) has been to stress for complete and systematic measurement of as many flow parameters as permissible. These include the measurement of pressure and temperature profiles, friction drag and heat transfer. The accuracy of the data is enhanced by the existence of a thick nozzle-wall boundary layer which can be probed with a variety of instrumentation of the sophistication necessary for high resolution. The data are also obtained systematically in terms of having a range of Reynolds number conditions and, for this investigation, a range of heat-transfer conditions.

The material presented in this report, although similar in description to the earlier data of Lee, Yanta, and Leonas (Ref. 1) constitutes a complete rerunning of the earlier test program with improved instrumentation. Furthermore, the new data are more comprehensive in that a wider range of heat-transfer conditions and probing stations are included. Consequently, the data presented in this report supersede the earlier data of NOLTR 69-106.

## FACILITY AND TEST CONDITIONS

The experiments were performed in the NOL Boundary Layer Channel (Ref. 2) shown in Figure 1. The two-dimensional supersonic half-nozzle has for one wall a flat copper test plate, 2.69 meters long, along which the boundary-layer measurements were made. The opposite wall consists of an adjustable flexible plate which was contoured to produce a Mach 4.9 zero-pressure-gradient flow over the flat test plate beginning at 1.397 meters downstream from the nozzle throat. The nozzle contour was designed by using a method of characteristics computer program and correcting for the boundary-layer displacement thickness. Axial Pitot-pressure surveys showed the flow to be shock free with a variation in the free-stream Mach number of no more than  $\pm 1.0$  percent within the uniform-flow test region.

The two-dimensionality of the flow in the facility has been investigated and is discussed in References 1 and 3. The general conclusion reached was that for a central region, approximately 15 centimeters wide and running the length of the test plate, the flow did not exhibit any effects due to cross flow.

Boundary-layer data were obtained at five instrumentation ports along the flat test plate corresponding to 1.524, 1.778, 1.981, 2.134 and 2.286 meters from the nozzle throat. These ports provided for

the introduction of a traversing probe mechanism, a skin-friction balance or heat-transfer gage.

Tests were conducted at tunnel supply pressures between 1 and 10 atmospheres, at unit atmosphere increments for friction and heat transfer and at 1, 5 and 10 atmospheres for profile measurements. Nominal supply temperatures corresponded to 336°K for the adiabatic-wall case and 423°K for the moderate- and severe-heat-transfer conditions. The wall temperature downstream of the throat region was controlled by cooling the copper test plate with water for the adiabatic wall and moderate-heat-transfer studies and with liquid nitrogen for the severe-heat-transfer case. These test conditions provided a nominal range of momentum thickness Reynolds number from 7,000 to 58,000 at wall-to-adiabatic-wall temperature ratios of 1.0, 0.8, and 0.25. Typical boundary-layer thicknesses ranged from 5 to 9 centimeters which enabled detailed probing of the boundary layer into the sublayer.

#### INSTRUMENTATION

Boundary-layer profile surveys were made by simultaneously traversing a Pitot pressure probe and stagnation temperature probe through the boundary layer in a double-probe holder configuration as shown in Figures 2 and 3. Both probes were aligned with the probe tips located 7.6 centimeters upstream of the center of the instrumentation port. The separation distance between the probe tips was 2.54 centimeters, a sufficient distance to eliminate probe-to-probe interference. Each traverse was made from the free stream towards the plate with a maximum movement of 11 centimeters. Data were recorded with the probes at rest and only when the probe pressure and temperature were observed to have reached equilibrium conditions. The data-acquisition system simultaneously recorded seven channels of profile data on digital voltmeters and converted the information directly to a computer card output.

Boundary-layer Pitot-pressure profiles were obtained using a flattened Pitot probe with a rectangular 0.076 x 2.54 millimeter inlet. Due to the small opening of the probe and its use near the wall, two corrections to the Pitot-pressure data were incorporated in the data reduction.

Since the air density in the inner region of the boundary layer can be low and since the Pitot probe opening is small, the ratio of the mean free path of the gas to the probe opening can be of a sufficiently large value so as to place the gas dynamics in the slip flow regime. Since viscous-flow interaction corrections were not available for the flattened probe geometry used, a separate calibration of the probe was conducted in a low-density wind tunnel for Mach numbers between 0.1 and 0.4 and Reynolds numbers (based on probe inlet height) between 0.5 and 50. The resulting probe correction is shown in Figure 4 with the corresponding polynomial curve fit given in Appendix A. It should be noted that this correction becomes significant only in the inner portion of the low Reynolds number profiles.

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The second correction to the Pitot-pressure data resulted from a probe-wall interference. This effect appears to be caused by the deflection of the local streamlines around the Pitot-probe tip at locations near the wall. Since no direct calibration for this probe effect was known, a correlation was derived which relied on the shear balance data to provide the correct Mach number gradient at the wall. It was found that the difference between the Mach number profile from the Pitot-pressure data and the Mach number gradient determined from the wall shear could be correlated in terms of a Reynolds number ratio based on the distance from the wall and the probe height. The resulting correlation is shown in Figure 5 and the corresponding polynomial curve fit given in Appendix A. A compilation of adiabatic-wall data measured in zero and mild favorable- and adverse-pressure-gradient flows was used in obtaining this correction. Its application in the present paper, however, has been extended to the moderate- and severe-heat-transfer conditions. The procedure used in applying both corrections to the Pitot pressure data was to first apply the viscous-flow interaction correction where applicable followed by the superposition of the probe-wall interference correction.

In addition to the local Pitot-pressure determination, the local static pressure through the boundary layer was evaluated. At certain upstream stations along the test plate the boundary layer extended into the nonuniform expansion flow ahead of the test rhombus. Thus, the local static pressure varied with distance from the wall. Since the flat test plate surface is essentially a plane of symmetry in a conventional two-dimensional nozzle, the isobars are normal to the test plate at the wall and the static-pressure variation, if any, would become apparent only in the outer region of the boundary layer. Three methods for evaluating this static-pressure variation have been investigated in conjunction with an adverse-pressure-gradient test program conducted in this facility (see Ref. 3). First, the static pressure was computed analytically from a strictly isentropic method-of-characteristics nozzle core flow computation. The second method involved the direct measurement of the static pressure using a cone-cylinder static-pressure probe. And, in the third approach, the static pressure external to the boundary layer in the isentropic nozzle core flow was determined from adiabatic flow equations using the ratio of the local Pitot-to-tunnel-supply pressure. A comparison of data obtained from these three methods pointed out the good agreement between an analytical nozzle core computation and actual measurements. For this reason, the static-pressure profiles used for the final analysis were determined by extrapolating the external static pressure determined from the third method to the measured wall pressure according to the variation as computed from the isentropic nozzle core calculations.

The stagnation temperature through the boundary layer was measured using either the conical equilibrium temperature probe (Ref. 4), or the fine-wire stagnation temperature probe (Ref. 5), or both. The conical equilibrium temperature probe, pictured in Figure 2, consisted of a 10-degree total-angle platinum cone with a

thermocouple mounted in its base. The cone was supported by a 1.27-millimeter diameter, 12.7-millimeter-long glass tube which also served to insulate the cone from the probe support. The measured cone temperature together with the measured local Mach number and cone tables provided the necessary information to calculate the local stagnation and static temperatures (see Ref. 4). A cone recovery factor equal to the square root of the Prandtl number was assumed, based on the cone equilibrium temperature.

The fine-wire stagnation temperature probe, pictured in Figure 3, consisted of a fine wire (0.0254-millimeter-diameter, 3.56-millimeter long) placed normal to the flow with a chromel-alumel thermocouple junction at its center. The local stagnation temperature was computed from the measured wire center and support temperatures and the corresponding measured Pitot pressure using the empirical equations given in Reference 5 for predicting the heat exchange to and from the wire. Using the local Mach number, the local static temperature was evaluated.

The use of two temperature-probe configurations was based on several factors. Due to the severe temperature gradients which were encountered in the inner region of the boundary layer as with the cold-wall studies, the fine-wire probe was of advantage because of its small size and spatial resolution. However, since the fine-wire probe could not withstand high aerodynamic loading, the sturdier cone probe had to be used for the high Reynolds number runs. Thus, each probe complemented the other, and for many cases duplicate data were obtained.

The local wall shear was measured directly in these tests using two skin-friction balances, one developed at NOL with a cryogenic cooling capability and the other purchased from the Kistler Instrument Corporation, Clarence, New York. Both balances are of the self-nulling type whereby a circular floating element is continually recentered by a servo-feedback system. The basic design of the NOL skin-friction balance is described in Reference 6; however, significant modifications have been made to the basic mechanism since Reference 6 to increase sensitivity and to eliminate pressure and temperature effects which existed in the earlier model. The balance was designed for measuring the wall shear in flows with heat transfer and pressure gradient. Although the balance design included a provision for cooling the floating surface element for the cold-wall studies, this mechanism did not operate properly and was not used. Thus, the balance measurements for the cold-wall studies were obtained with a floating element at a higher temperature than the wall. The modified version of the NOL skin-friction balance is pictured in Figure 6. The Kistler balance, Model No. 322M107, was not designed for cold-wall conditions and had to be used only under adiabatic wall and moderate-heat-transfer conditions. Details of the design and operation of this balance are given in Reference 7.

Heat-transfer measurements were made using a thermopile gage mounted on the surface of a copper instrumentation port. The gage

was purchased from the RdF Corporation, Hudson, New Hampshire, and had the designated name of Micro-Foil Heat Flow Sensor, Model No. 20463-3. The thermopile consisted of a group of 40 differential thermocouples connected in series with the hot and cold junctions located respectively on opposite sides of a thin thermal barrier. As the heat flowed through the barrier, a temperature difference was established which was proportional to the heat flux. A gage calibration was supplied by the manufacturer.

#### DATA REDUCTION

Simultaneous readings of the tunnel supply pressure and temperature, the Pitot pressure, the temperature-probe thermocouple outputs, and the probe location were obtained at each probe location in a boundary-layer profile. Since the pressure and temperature probes were not of the same diameter nor mounted exactly at the same  $y$  location, the temperature data were interpolated to the location of the pressure probe. Furthermore, in the case of the data taken with the conical equilibrium temperature probe, temperature measurements could not be taken closer than 0.635 millimeter from the wall and an interpolation had to be incorporated to match the location of the Pitot pressure data in this inner region. This interpolation near the wall was accomplished by fitting a second-order polynomial of  $T/T_e$  vs  $(u/u_e)$  to match the static temperature and velocity conditions at the wall, at  $u/u_e = 1.0$ , and at a point one probe diameter away from the wall.

The static-pressure distribution normal to the wall was incorporated in the data reduction as well as into profile and integral parameter definitions. These modifications were necessary for the correct determination of the total boundary-layer thickness and boundary-layer flux deficits in that the so-called "ideal" flow properties (Refs. 8 and 9) had to be accounted for. These "ideal" properties, calculated from the local static pressure and the tunnel supply pressure and temperature, would represent the inviscid flow if the boundary layer were not present. The modified integral parameters are defined as

displacement thickness

$$\delta^* = \frac{1}{\rho_w' u_w'} \int_0^{\delta'} (\rho' u' - \rho u) dy \quad (1)$$

momentum thickness

$$\theta' = \frac{1}{\rho_w' u_w'^2} \int_0^{\delta'} \rho u (u' - u) dy \quad (2)$$

energy thickness

$$\theta_E' = \frac{1}{\rho_w' u_w'^3} \int_0^{\delta'} \rho u (u'^2 - u^2) dy \quad (3)$$

total enthalpy thickness

$$\theta_H' = \frac{1}{\rho_w' u_w'} \int_0^{\delta'} \rho u \left(1 - \frac{h_t}{h_{te}}\right) dy \quad (4)$$

where the primed quantities refer to the "ideal" flow quantities and  $\delta'$  is defined as the distance from the wall where  $u/u' = 0.995$ . The modified integral thicknesses are non-dimensionalized by the "ideal" properties at the wall because the properties at the edge of the boundary layer were less consistent and more difficult to define. (Care should be taken in interpreting the "ideal" properties at the wall since  $T_w' \neq T_w$  and  $u_w' \neq 0$ , but rather these quantities are based on the inviscid Mach number at the wall,  $M_w'$ , calculated from  $P_o$  and  $P_{sw}$ .) The modified definitions reduce to the classical definitions when the static pressure is constant through the boundary layer.

The data reduction for skin friction was based on static calibrations performed on the shear balances before and/or after each test run. In the case of heat transfer, the manufacturer's calibration was accepted. It should be noted that the skin-friction and heat-transfer measurements were obtained at the instrumentation port locations whereas profile data were obtained at a location 7.6 centimeters ahead of each port location. Thus, an interpolation is necessary to obtain corresponding information at any one location. This manipulation is left to the reader.

The complete documentation of all profile, skin-friction and heat-transfer data is provided in Appendices B through D.

#### DISCUSSION OF DATA

Although a complete analysis of the data is planned for subsequent publication, a brief description of the trends indicated by the data will be made at this time.

Sample skin-friction data are presented in Figure 7 for the three heat-transfer conditions. A comparison of the data with the method of Spalding-Chi (Ref. 10) indicates that for the adiabatic-wall and moderate-heat-transfer cases the experimental values of  $C_f$  are lower than predicted by approximately 20 percent, whereas for the severe-



heat-transfer case the data are approximately 5 percent higher than predicted. The discrepancy with Spalding-Chi theory for the adiabatic-wall and moderate-heat-transfer data was reported earlier in Reference 1 and appears to be a consistent trend. In the case of the severe-heat-transfer data, the temperature of the floating element of the skin-friction balance was approximately 100°K above the cryogenically cooled test-plate temperature. Based on some limited data, it appears that this temperature difference could have had the effect of increasing the measured shear by as much as 20 percent. An analysis of this effect will be made in subsequent reports. One noted difference in the results of this investigation with those of NOLTR 69-106 is that the skin friction coefficient varied inversely with  $Re_\theta$  to the .25 power rather than to the 0.10 power as reported earlier.

Sample correlations of the data using a law-of-the-wall correlation are shown in Figure 8 for the three heat-transfer conditions. The law-of-the-wall data are presented using the Van Driest II (Ref. 11) transformation with the wall shear obtained from the shear-balance measurements. The data showed good agreement with the theory for the adiabatic-wall and moderate-heat-transfer conditions whereas the cold-wall data showed some deviation. (This discrepancy in the cold-wall data may be a reflection of possible errors in the measured wall shear as previously discussed.) A law-of-the-wall correlation by Fernholz (Ref. 12) was investigated which gave an improved agreement for the adiabatic-wall and moderate-heat-transfer cases. Extension of this correlation to the severe heat transfer case showed poorer agreement since curve fits used in the correlation had to be extrapolated beyond the range of heat-transfer conditions considered by Fernholz.

In terms of a temperature-velocity correlation, Figure 9 shows the plot of the static-temperature ratio versus velocity ratio for a sample of the heat-transfer data collected. The data are compared to the polynomial relation

$$\frac{T}{T_e} = A + B \left(\frac{u}{u_e}\right) + C \left(\frac{u}{u_e}\right)^2 \quad (5)$$

where

$$A = \frac{T_w}{T_e} \quad B = \frac{T_{aw} - T_w}{T_e} \quad C = \frac{T_e - T_{aw}}{T_e}$$

The mismatch between data and theory in the outer part of the boundary layer is characteristic of nozzle-wall boundary-layer flows and relates to upstream history effects. Near the wall the temperature gradients correlate well with local heat-transfer measurements.

The Reynolds analogy correlation shown in Figure 10 depicts a discrepancy in the data correlation which should be explained. The main point to be noted is that the recovery factor used in determining the local Stanton number was assumed constant and equal to 0.89. Preliminary experimental results, described in Reference 3, show that the recovery factor is not constant but is strongly affected by upstream temperature history. By using a lower recovery factor the agreement between the data and theory would be more consistent.

The boundary-layer flow in these tests experienced both a pressure history caused by the nozzle expansion and a temperature history caused by energy removal at the nozzle throat. Although some trends in the data due to upstream history effects have been discussed, a complete understanding of the relative contributions from pressure and temperature history are still under investigation. A discussion of these effects together with a more complete analysis of the results will be made in subsequent reports.

Although the tests performed in this investigation were similar to those of NOLTR 69-106, there were differences in the tests which reflected differences in the respective test results. One such difference involved the installation of a copper test plate as replacement for the stainless steel plate used in the earlier study. The differences in material and cooling capability of these plates resulted in differences in upstream wall temperature distributions which influenced downstream boundary layer results. Other differences which must be considered result from the improved instrumentation and probe corrections, the differing instrumentation port locations, and slightly differing test conditions.

#### CONCLUSION

A detailed, experimental investigation of the compressible turbulent boundary layer in a zero-pressure-gradient flow was conducted in the NOL Boundary Layer Channel at wall-to-adiabatic-wall temperature ratios of 1.0, 0.8 and 0.25 and momentum thickness Reynolds numbers from 7,000 to 58,000. Complete, and often redundant, measurements of the boundary layers were made with Pitot pressure probes, conical equilibrium and fine-wire stagnation temperature probes, shear balances, and a heat-transfer gage. All data has been reduced and is documented in the report. A brief description of the results is given with a more complete analysis planned for later publication.

#### REFERENCES

1. Lee, R. E., Yanta, W. J., and Leonas, A. C., "Velocity Profile Skin-Friction Balance, and Heat-Transfer Measurements of the Turbulent Boundary Layer at Mach 5 and Zero Pressure Gradient," NOLTR 69-106, June 1969
2. Lee, R. E., Yanta, W. J., Leonas, A. C. and Carner, J., "The NOL Boundary Layer Channel," NOLTR 66-185, November 1966

3. Voisinet, R. L. P., Lee, R. E., and Yanta, W. J., "An Experimental Study of the Compressible Turbulent Boundary Layer with an Adverse Pressure Gradient," Paper No. 9 "Turbulent Shear Flows", AGARD-CP-93, London, U. K., September 1971
4. Danberg, J. E., "The Equilibrium Temperature Probe, a Device for Measuring Temperatures in a Hypersonic Boundary Layer," NOLTR 61-2, December 1961
5. Yanta, W. J., "A Fine-Wire Stagnation Temperature Probe," NOLTR 70-81, June 1970
6. Bruno, J. R., Yanta, W. J. and Risher, D. B., "Balance for Measuring Skin Friction in the Presence of Heat Transfer," NOLTR 69-56, June 1969
7. Paros, J. M., "Application of the Force-Balance Principle to Pressure and Skin Friction Sensors, I.E.S. Symposium, April 1970
8. Kepler, C. E. and O'Brien, R., "Supersonic Turbulent Boundary Layer Growth Over Cooled Walls in Adverse Pressure Gradients," ASD-TDR-62-87, Wright-Patterson Air Force Base, October 1962
9. Hoydysh, W. G. and Zakkay, V., "An Experimental Investigation of Hypersonic Turbulent Boundary Layers in Adverse Pressure Gradient," AIAA Paper No. 68-44, January 1968
10. Spalding, D. B. and Chi, S. W., "The Drag of a Compressible Turbulent Boundary Layer on a Smooth Flat Plate With and Without Heat Transfer," Journal of Fluid Mechanics, Vol. 18, Pt. 1, January 1964, pp. 117-143
11. Van Driest, E. R., "Turbulent Boundary Layer in Compressible Fluids," J. A. S., Vol. 18, No. 3, March 1951, pp. 145-160
12. Fernholz, H., "Geschwindigkeitsprofile, Temperaturprofile and halbempirische Gesetze in kompressiblen turbulenten Grenzschichten bei konstantem Druck," Ing. Archiv 38, No. 4/5, 1969, pp. 311-328

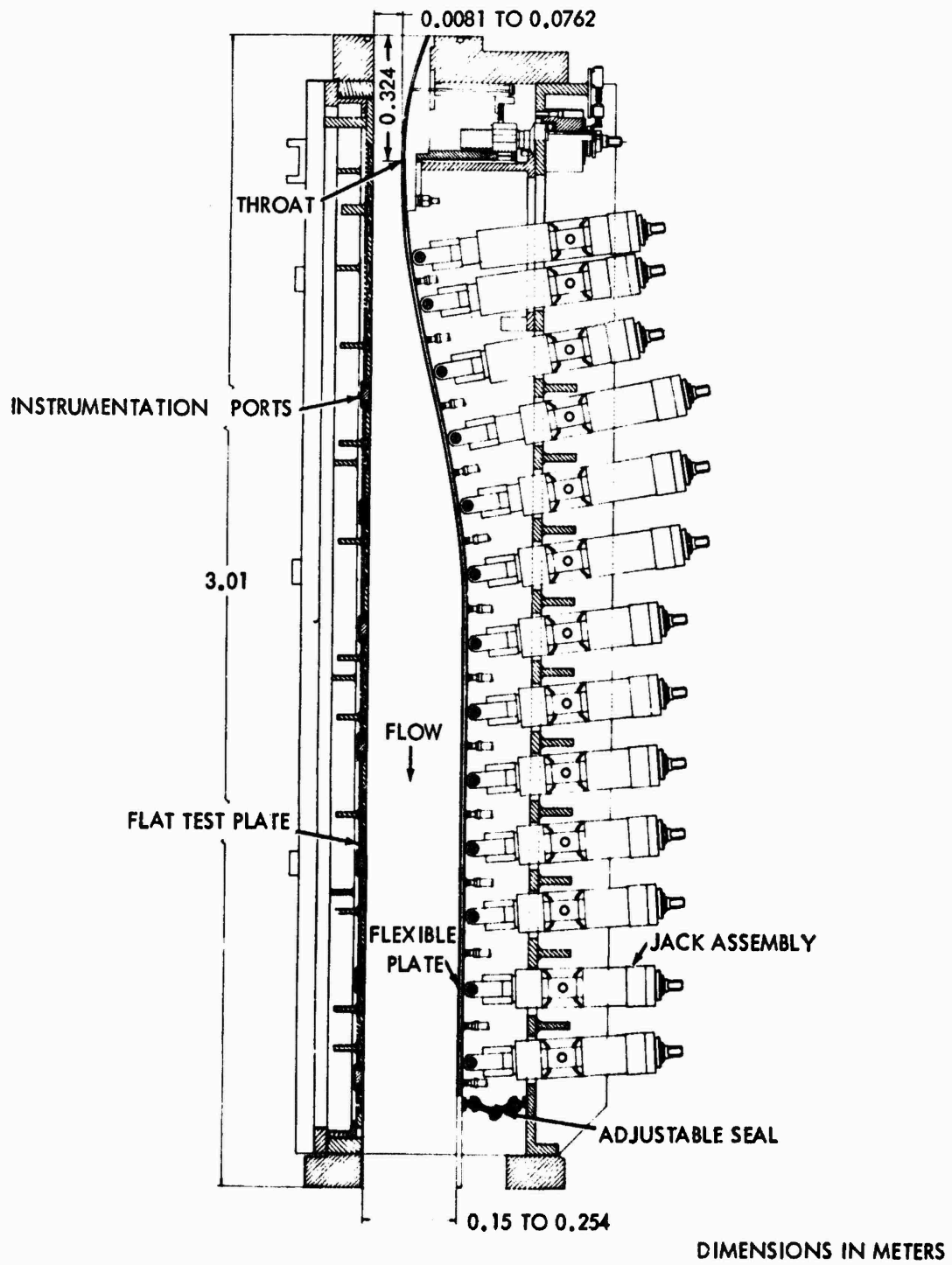


FIG. 1 NOL BOUNDARY LAYER CHANNEL

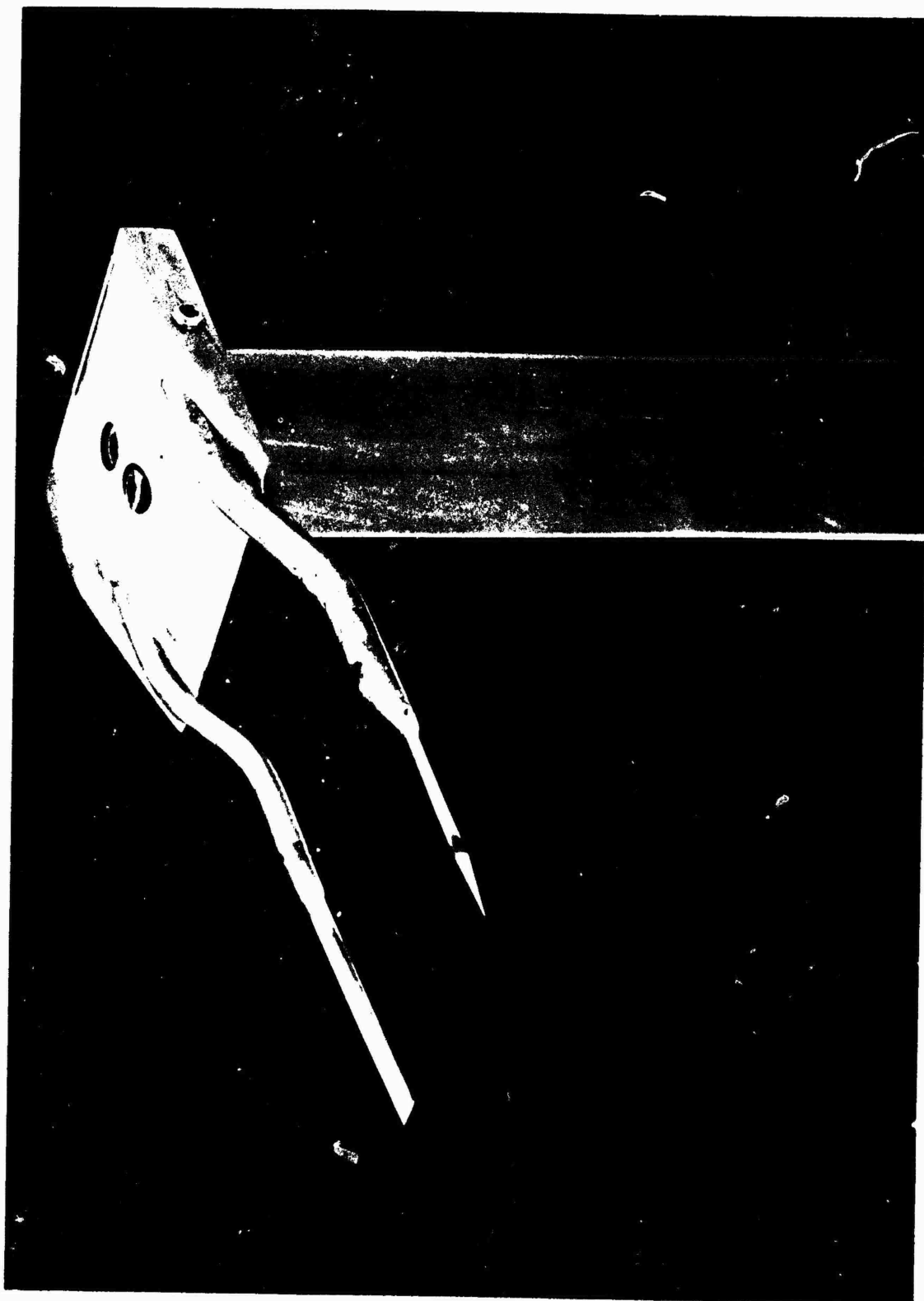


FIG. 2 DOUBLE PROBE MOUNT WITH CONICAL-EQUILIBRIUM TEMPERATURE PROBE

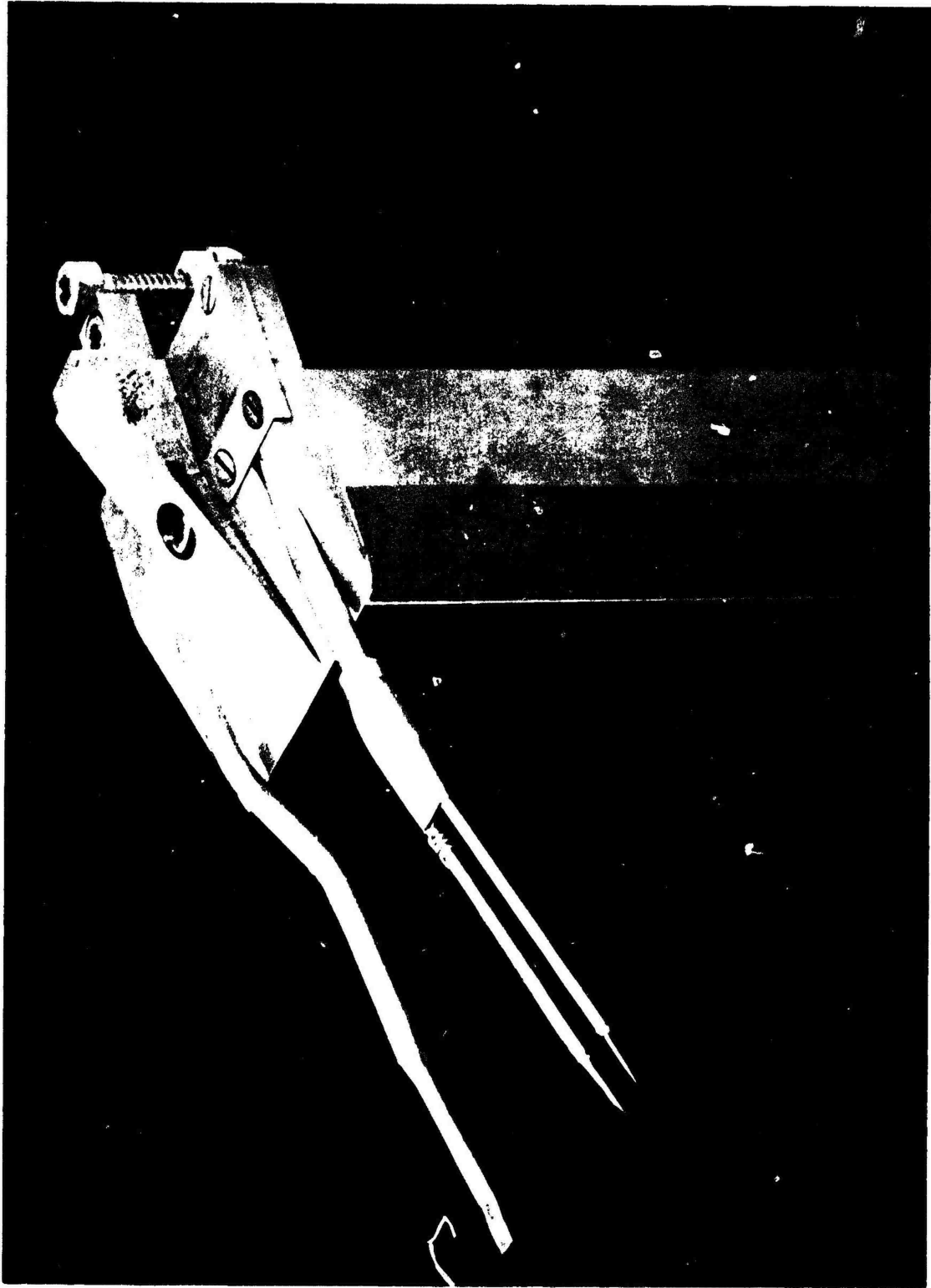


FIG. 3 DOUBLE PROBE MOUNT WITH FINE-WIRE TEMPERATURE PROBE

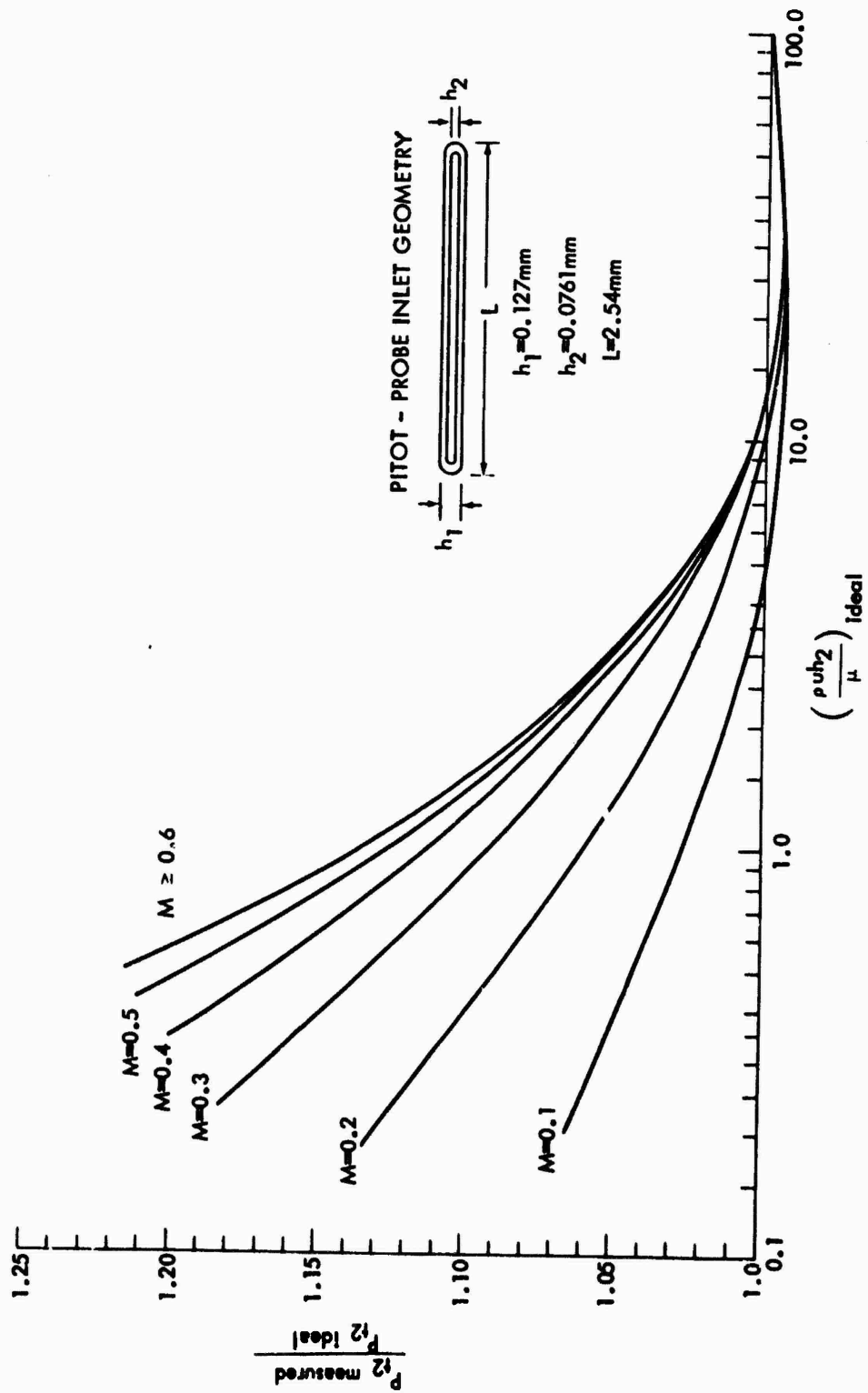


FIG. 4 PITOT PROBE VISCOUS FLOW INTERACTION CORRELATION

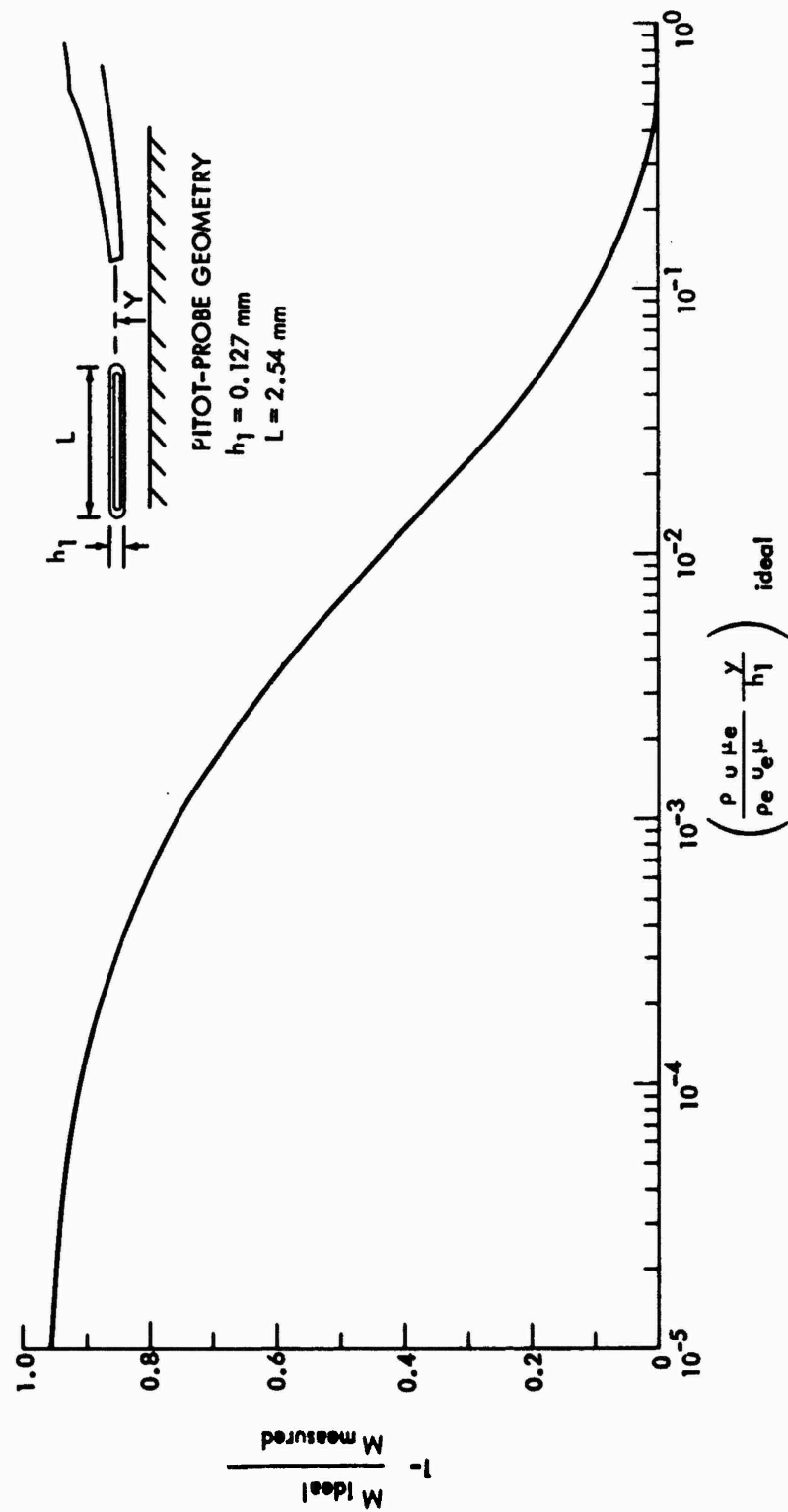


FIG. 5 PITOT PROBE-WALL INTERFERENCE CORRELATION



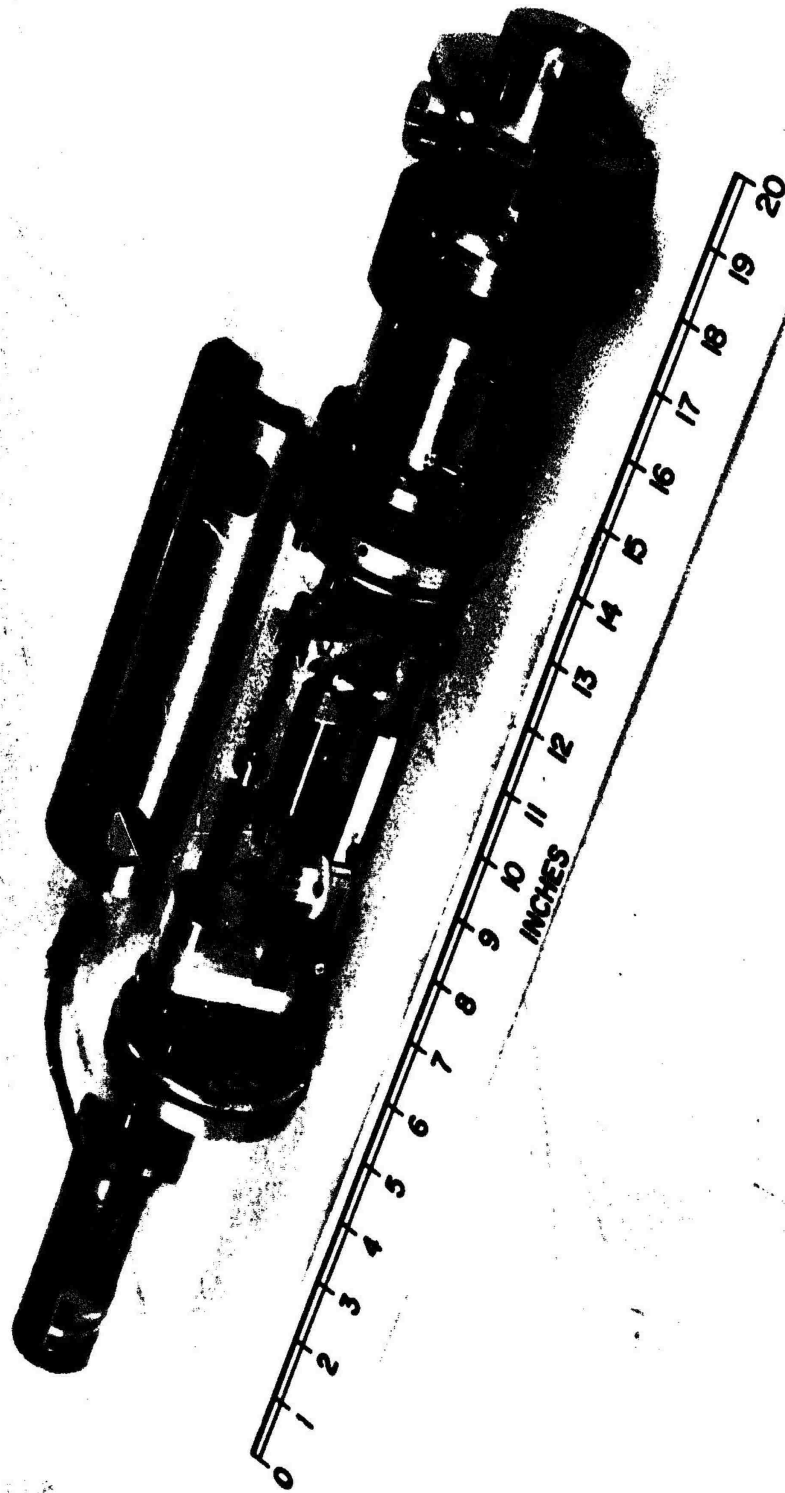


FIG. 6 MODIFIED SKIN-FRICTION BALANCE

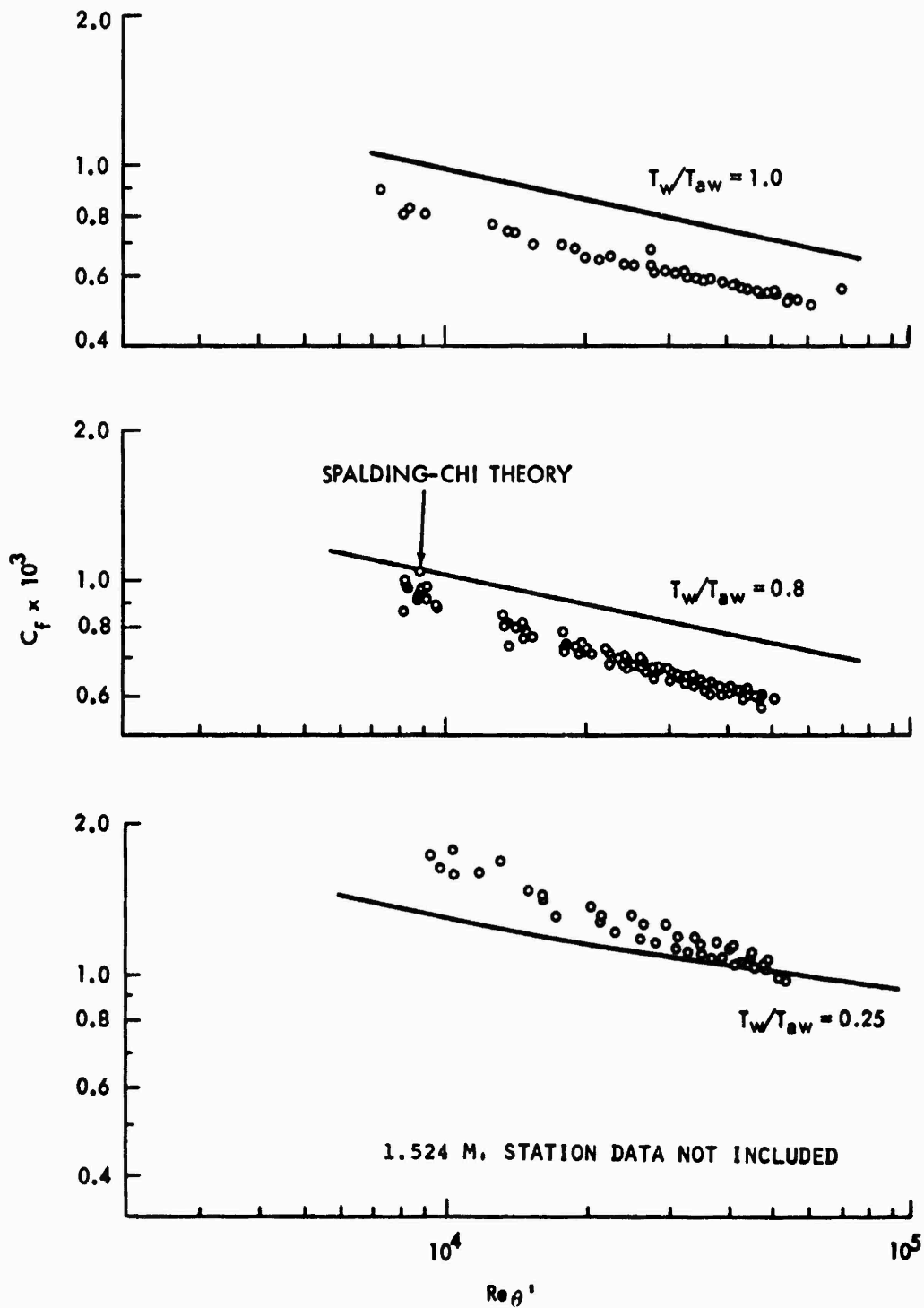


FIG. 7 SKIN FRICTION - REYNOLDS NUMBER CORRELATION

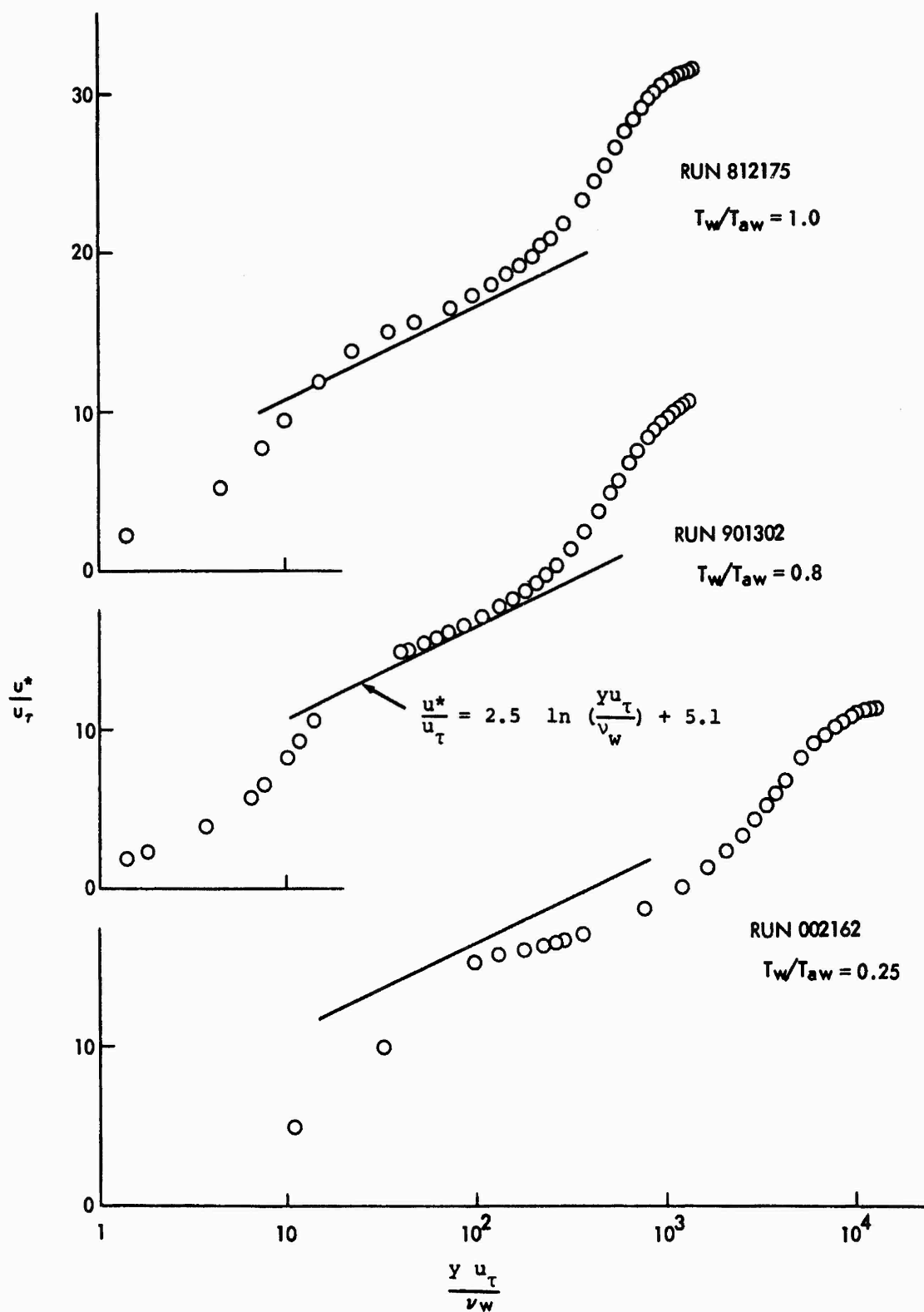


FIG. 8 LAW-OF-THE-WALL CORRELATION

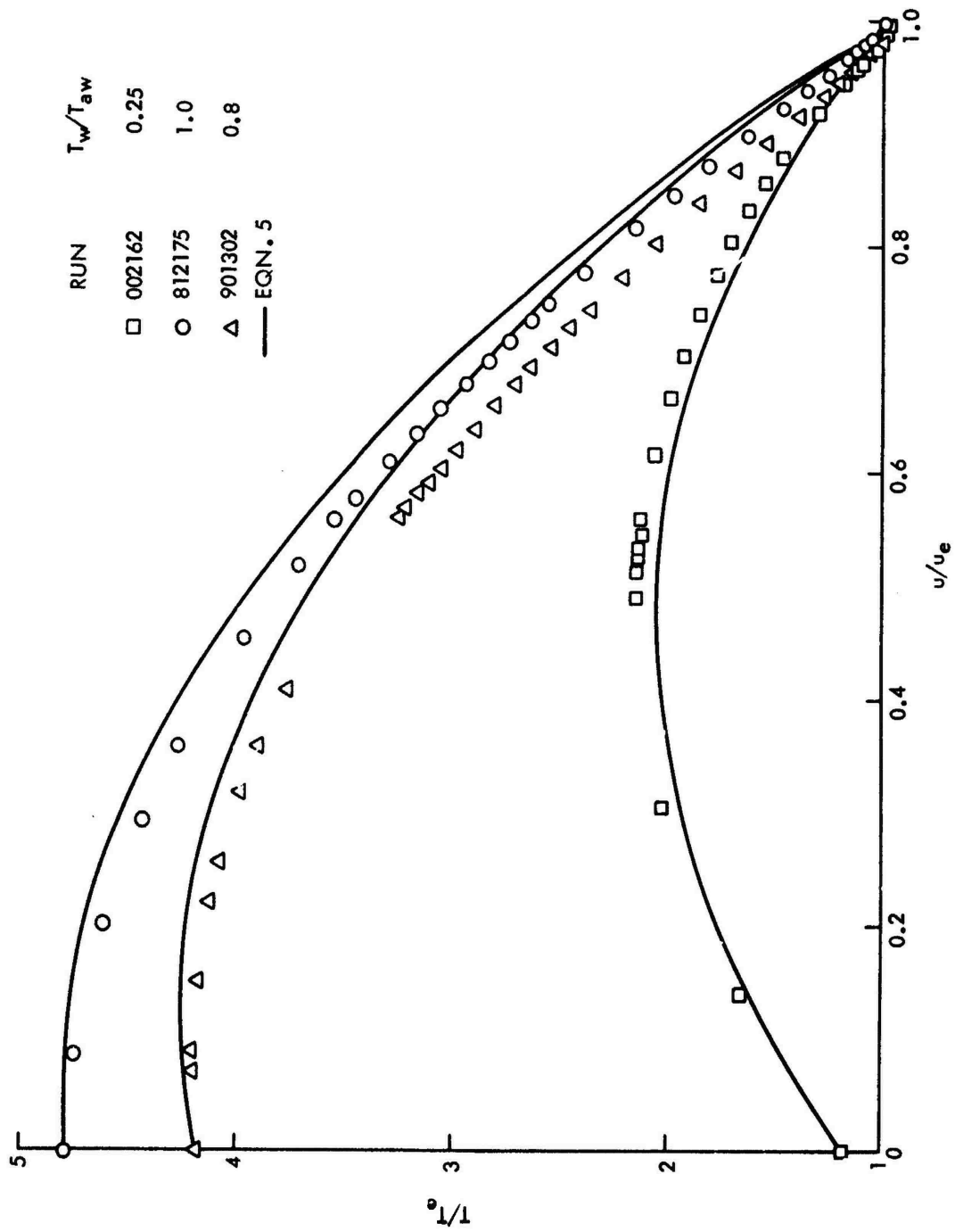


FIG. 9 STATIC TEMPERATURE - VELOCITY CORRELATION

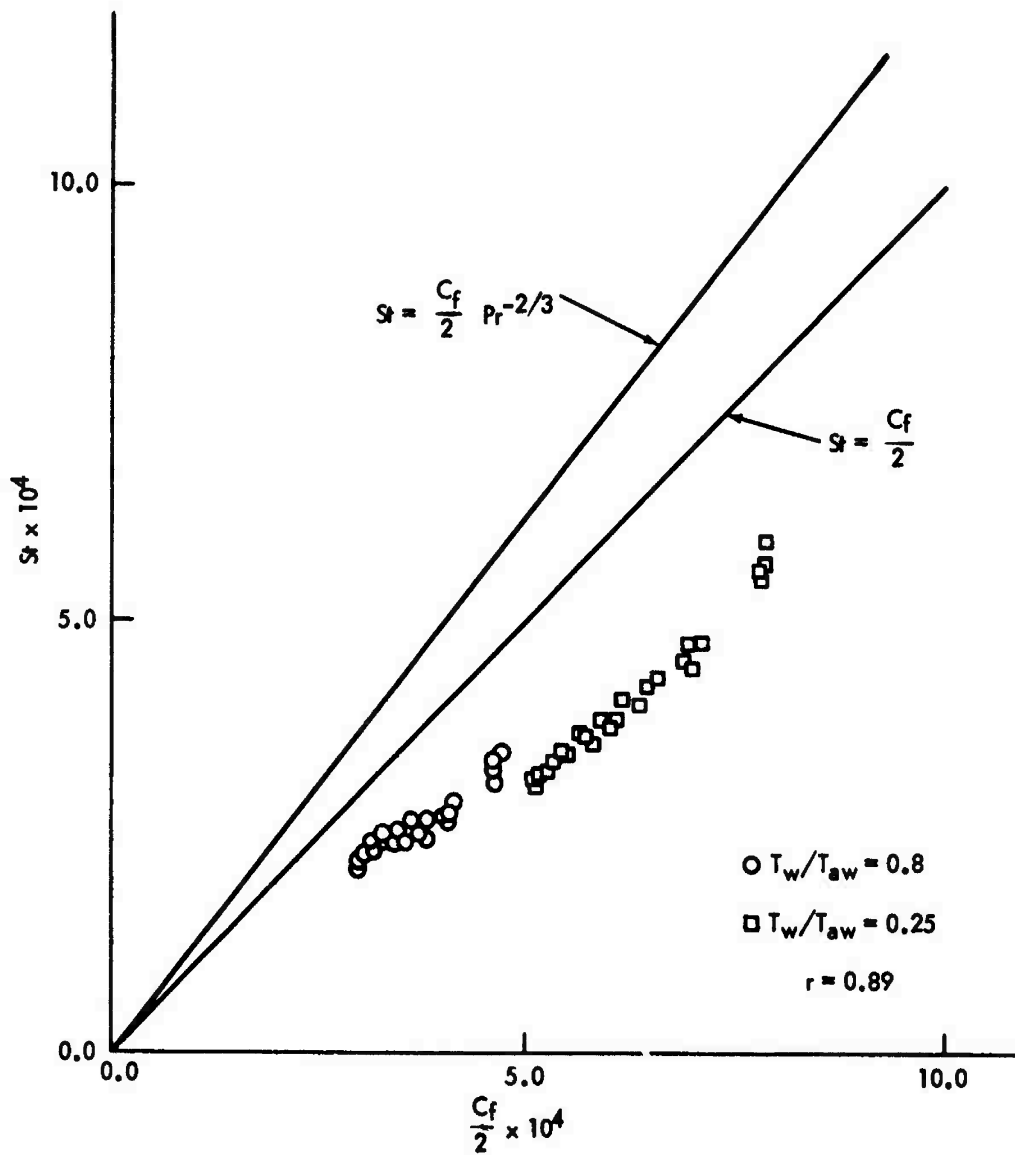


FIG. 10 REYNOLDS ANALOGY CORRELATION

## APPENDIX A

## Pitot-Probe-Correction Curve Fits

The curves presented in Figure 4 for the Pitot probe-viscous flow interaction correlation can be represented by fourth-order polynomial fits of the form

$$PR = C_1 + C_2(LR) + C_3(LR)^2 + C_4(LR)^3 + C_5(LR)^4$$

where

$$PR = \frac{P_{t2} \text{ (measured)}}{P_{t2} \text{ (ideal)}}$$

$$R = \left( \frac{\rho u h_2}{\mu} \right) \text{ (ideal)}$$

$$LR = \ln(R)$$

$$h_2 = \text{Pitot-probe opening height}$$

The polynomial coefficients for each of the Mach number curves can be obtained from the following table:

M	C <sub>1</sub>	C <sub>2</sub>	C <sub>3</sub>	C <sub>4</sub>	C <sub>5</sub>
0.0	0.994	0.0	0.0	0.0	0.0
0.1	1.0262	-2.3196E-2	3.0032E-3	9.6124E-4	-1.9327E-4
0.2	1.0590	-3.9102E-2	4.8422E-3	9.5122E-4	-1.9176E-4
0.3	1.0919	-5.5262E-2	5.9327E-3	1.1693E-3	-1.8428E-4
0.4	1.1124	-7.1894E-2	9.0051E-3	1.5310E-3	-2.8603E-4
0.5	1.1265	-8.5767E-2	1.3150E-2	1.2599E-3	-3.1682E-4
≥0.6	1.1338	-9.6399E-2	1.8926E-2	-1.2974E-4	-1.9246E-4

These fits are valid only in the range of probe height Reynolds number between .05 and 30. For values between 30. and 100., the following linear relation was used:

$$P = 0.994 + 8.57143E-5 (R-30.)$$

No correction was made when the probe height Reynolds number was greater than 100.

Similarly, the curve presented in Figure 5 for the Pitot probe-wall interference correlation was represented by a polynomial curve of the form

$$DM = C_6 + C_7(AL) + C_8(AL)^2 + C_9(AL)^3 + C_{10}(AL)^4$$

where

$$DM = 1. - \frac{M_{(ideal)}}{M_{(measured)}}$$

$$L = \left( \frac{\rho_{ue}}{\rho_e u_e} \frac{y}{h_1} \right)_{(ideal)}$$

$$AL = \ln(L)$$

$h_1$  = Overall Pitot-probe height

The polynomial coefficients for this curve are

$$C_6 = 1.89440E-2$$

$$C_7 = 1.45838E-1$$

$$C_8 = 3.02638E-1$$

$$C_9 = 7.37242E-2$$

$$C_{10} = 5.29635E-3$$

## APPENDIX B

## Discussion of Tabular Output

The data described in the text of this report are documented in the tables of Appendix D. A discussion of these tables will now be given.

The nozzle contour used in all tests is described by the coordinates in the first table. This contour shape was designed for a moderate-heat-transfer test condition with  $P_0 = 5$  atmospheres and  $T_0 = 423^\circ\text{K}$ . The Mach number distribution along the test plate was prescribed by the following relation

$$M = 4.9 - 3.9 \left(1 - 0.1765 \frac{x}{x_T}\right) \left(1 - \frac{x}{x_T}\right)^2 \text{ for } 0 < x < x_T$$

$$M = 4.9 \text{ for } x \geq x_T$$

where  $x_T = 1.397$  meters is the beginning of the test rhombus. A comparison of the design and experimental wall-pressure distributions along the test plate is given in Table 2 for the design test condition. For other test conditions, variations from the design condition can be observed in the data corresponding to differences in the growth of the boundary layer.

Average wall-temperature distributions are given in Table 3. The various temperature distributions presented are the result of the relative efficiency of the heat exchanger used in cooling the test plate in the nozzle throat region. This heat exchanger was insufficient in maintaining a constant wall temperature at the throat region which resulted in an increase in throat wall temperature with increasing Reynolds number. The temperature distributions are coded and referenced to run numbers in Table 4. The wall-pressure and temperature information along the test plate is presented as an aid to the evaluation of boundary-layer history effects.

Table 4 presents the general testing program in terms of profile run numbers and appropriate testing stations and conditions. Three groupings of data are presented, corresponding to each of the heat-transfer conditions. In each grouping, profiles were obtained for five instrumentation port locations and three supply-pressure conditions.

The detailed listing of the boundary-layer profile data for each test run is given in Table 5. The computer nomenclature used in this output is defined in Appendix C. Skin-friction and heat-transfer data are similarly documented in Tables 6 and 7. In these last two tables, values of the momentum-thickness Reynolds number are given which may differ slightly from the values given in the profile results. This is because the values in Tables 6 and 7 were interpolated from the profile measurements to compensate for the different  $x$  locations and tunnel conditions.



## APPENDIX C

## Computer Nomenclature

The nomenclature used in the computerized tabular output is defined as follows:

CF	=	$C_f$	=	$\frac{2\tau_w}{\rho_w' u_w'^2}$	=	local skin-friction coefficient
D	=	$\rho$	=	density		
DP	=	$\rho'$	=	"ideal" density		
DE	=	$\rho_e$				
DPE	=	$\rho_e'$	=	$\rho_e$		
DPW	=	$\rho_w'$				
DELP	=	$\delta'$	=	boundary layer thickness where $u/u' = 0.995$		
DSTRP	=	$\delta^*$	=	boundary layer displacement thickness		
M	=	M	=	local Mach number		
ME	=	$M_e$	=	$M_e'$		
MPW	=	$M_w'$				
PO	=	$P_o$	=	tunnel supply pressure		
PS	=	$P_s$	=	local static pressure		
PSW	=	$P_{sw}$	=	local wall static pressure		
Q	=	$\dot{q}$	=	local wall heat-transfer rate		
RE	=	$\frac{\rho_e u_e}{\mu_e}$	=	free-stream Reynolds number		
RPW	=	$\frac{\rho_w' u_w'}{\mu_w'}$	=	"ideal" free-stream Reynolds number		
RTHPW	=	$\frac{\rho_w' u_w' \theta'}{\mu_w'}$	=	"ideal" free-stream momentum-thickness Reynolds number		
STA	=	x	=	axial station		
ST89	=	$S_t _{r=0.89}$	=	$\frac{\dot{q}}{\rho_w' u_w' C_p (T_{aw} - T_w)}$	=	Stanton number where $T_{aw}$ is evaluated for $r=0.89$

T		= temperature
TE	= $T_e$	= static temperature
TP	= $T'$	= "ideal" static temperature
TPE	= $T'_e$	= $T_e$
TPW	= $T'_w$	
TW	= $T_w$	= wall temperature
TT	= $T_t$	= stagnation temperature
TTE	= $T_{te}$	= free-stream stagnation temperature
TO	= $T_o$	= tunnel supply temperature
THP	= $\theta'$	= "ideal" momentum thickness
THEP	= $\theta'_E$	= "ideal" energy thickness
THHP	= $\theta'_H$	= "ideal" enthalpy thickness
TAWU	= $\tau_w$	= local wall shear
UE	= $u_e$	= free-stream velocity
UPW	= $u'_w$	= "ideal" free-stream velocity
X	= x	= axial distance in flow direction measured from nozzle throat
Y	= y	= distance normal to flat plate surface
ZPG-AW		= abbrev. zero-pressure-gradient adiabatic-wall
ZPG-MHT		= abbrev. zero-pressure-gradient moderate heat transfer
ZPG-CW		= abbrev. zero-pressure-gradient severe heat transfer (cold-wall)

The units used in the computerized tabular output conform to the International Standard of Units (Ref. C-1) and are defined as:

ATM	= atmospheres
CM	= centimeters
DEG.K	= degrees Kelvin
KG/M3	= kilograms per meter cubed
M	= meters

M/S     = meters per second  
N/M2    = newtons per meter squared  
W/M2    = watts per meter squared

Two symbols are used in the profile data listing and are defined as:

\*        = denotes boundary-layer thickness  $\delta'$   
\*\*       = denotes free-stream location

#### REFERENCE

C-1 Mechtly, E. A., "The International System of Units," NASA  
SP-7012

APPENDIX D  
Tabular Data

TABLE 1  
NOZZLE CONTOUR COORDINATES

x (m)	y (m)
0.0000	0.01077
0.2794	0.02959
0.3810	0.04598
0.5588	0.08738
0.7366	0.12970
0.9144	0.16475
1.0668	0.18952
1.2446	0.21296
1.4224	0.23107
1.6002	0.24485
1.7780	0.25518
1.9558	0.26264
2.1591	0.26838
2.3368	0.27162

TABLE 2  
NOZZLE WALL PRESSURE DISTRIBUTION

x (meters)	$\frac{P_{sw}}{P_o} \times 10^3$	
	Design	Experiment
0.000	528.30	-
0.127	194.04	-
0.257	70.02	-
0.385	29.24	-
0.559	11.47	10.68
0.635	8.25	8.00
0.711	6.22	6.04
0.787	5.22	4.68
0.864	3.97	3.95
0.940	3.32	3.44
1.067	2.66	2.67
1.143	2.41	2.43
1.194	2.31	2.29
1.270	2.20	2.10
1.448	2.12	1.99
1.524	2.12	1.99
1.702	2.12	2.04
1.778	2.12	2.09
1.905	2.12	2.04
1.981	2.12	2.02
2.057	2.12	2.03
2.134	2.12	2.05
2.210	2.12	2.11
2.286	2.12	2.14

### TABLE 3 NOZZLE WALL-TEMPERATURE DISTRIBUTION

					0.000	0.279	0.457	0.711	0.864	$x$ (meters)	1.067	1.194	1.448	1.702	1.905	2.057	2.210
	Code	Po atm	° OK	Average $T_v$ (°K)													
ZPG-AW	TD1	10.	348.	307.	306.	303.	297.	297.	297.	297.	297.	297.	297.	297.	297.	297.	297.
	TD2	5.	348.	296.	297.	299.	298.	298.	298.	298.	298.	298.	298.	298.	298.	298.	298.
	TD3	1.	348.	275.	283.	294.	298.	298.	298.	298.	298.	298.	298.	298.	298.	298.	298.
	TD4	5.	348.	300.	294.	294.	296.	296.	296.	296.	296.	296.	296.	296.	296.	296.	296.
	TD5	1.	348.	281.	284.	290.	296.	296.	296.	296.	296.	296.	296.	296.	296.	296.	296.
ZPG-WT	TD6	10.	423.	338.	300.	298.	298.	298.	298.	298.	298.	-	-	-	300.	299.	299.
	TD7	5.	423.	327.	301.	299.	299.	299.	299.	299.	299.	297.	-	-	302.	301.	301.
	TD8	1.	423.	288.	301.	299.	299.	299.	299.	299.	299.	299.	299.	300.	301.	301.	301.
	TD9	5.	423.	342.	333.	319.	300.	299.	299.	299.	299.	299.	299.	299.	299.	299.	299.
	TD10	1.	423.	300.	302.	303.	299.	299.	299.	299.	299.	299.	299.	299.	299.	299.	299.
ZPG-CW	TD11	10.	423.	332.	311.	288.	178.	124.	124.	97.	87.	-	87.	91.	91.	97.	-
	TD12	5.	423.	328.	-	275.	142.	94.	94.	88.	86.	-	86.	86.	87.	89.	-
	TD13	1.	423.	287.	257.	160.	88.	85.	85.	84.	84.	-	84.	84.	85.	85.	-

TABLE 4

## PROFILE-DATA RUN NUMBERS

## ADIABATIC-WALL PROFILE DATA

Temperature Data Taken With Conical Equilibrium Probe			
x (meters)	P <sub>O</sub> (atms)		
	10.	5.	1.
1.448	901311	812122	901312
1.702	812131	812132	812133
1.905	812161	812162	901298
2.057	812171	812172	901291
2.210	812174	812175	812176
T <sub>w</sub> Distribution	TD1	TD2	TD3

Temperature Data Taken With Fine-Wire Probe			
x (meters)	P <sub>O</sub> (atms)		
	10.	5.	1.
1.448	-	001061	001062
1.702	-	001073	-
1.905	-	001083	001084
2.057	-	001151	001152
2.210	-	001121	001271
T <sub>w</sub> Distribution	-	TD4	TD5

TABLE 4

## PROFILE-DATA RUN NUMBERS

## MODERATE-HEAT-TRANSFER PROFILE DATA

Temperature Data Taken With Conical Equilibrium Probe			
x (meters)	P <sub>O</sub> (atms)		
	10.	5.	1.
1.448	901304	901305	901306
1.702	901313	901314	901315
1.905	901295	901296	901297
2.057	901292	901293	901294
2.210	901301	901302	901303
T <sub>w</sub> Distribution	TD6	TD7	TD8

Temperature Data Taken With Fine-Wire Probe			
x (meters)	P <sub>O</sub> (atms)		
	10.	5.	1.
1.448	-	001071	001072
1.702	-	001081	001082
1.905	-	001085	001216
2.057	-	001201	001202
2.210	-	001141	001261
T <sub>w</sub> Distribution	-	TD9	TD10



TABLE 4

## PROFILE-DATA RUN NUMBERS

## SEVERE-HEAT-TRANSFER (COLD-WALL) PROFILE DATA

Temperature Data Taken With Conical Equilibrium Probe			
x (meters)	P <sub>o</sub> (atms)		
	10.	5.	1.
1.448	-	-	-
1.702	-	-	-
1.905	002121	002122	002123
2.057	002131	002132	002133
2.210	002161	002162	002163
T <sub>w</sub> Distribution	TD11	TD12	TD13

Temperature Data Taken With Fine-Wire Probe			
x (meters)	P <sub>o</sub> (atms)		
	10.	5.	1.
1.448	-	002103	002104
1.702	-	002101	002102
1.905	-	-	-
2.057	-	-	-
2.210	-	-	-
T <sub>w</sub> Distribution	-	TD12	TD13

TABLE 5 NOL BOUNDARY LAYER CHANNEL PROFILE DATA  
RUN NO 901311

STA = 1.448E+00 M ME = 4.804E+00 MPW = 4.876E+00 DELP = 4.922E+00 CM  
 PO = 1.018E+06 N/M2 DE = 1.326E-01 KG/M3 DPW = 1.258E-01 KG/M3 DSTRP = 1.686E+00 CM  
 TO = 3.561E+02 DEG.K TE = 6.741E+01 DEG.K TPW = 6.209E+01 DEG.K THP = 1.878E-01 CM  
 PSW = 2.226E+03 N/M2 UE = 7.669E+02 M/S UPW = 7.686E+02 M/S THEP = 3.471E-01 CM  
 TW = 3.020E+02 DEG.K RE = 2.399E+07 1/M RPW = 2.336E+07 1/M THMP = 7.612E-02 CM

N	Y(CM)	M	PS/PSW	TT/TTE	D/DE	T/TE	U/UE	DP/DPE	TP/TPE	UP/UPE
1	0.0000	0.0000	1.0000	.8479	.1951	4.7619	0.0000	.9488	.9792	1.0022
2	.0063	.2712	1.0000	.8469	.1982	4.6874	.1222	.9488	.9792	1.0022
3	.0135	.5489	1.0000	.8458	.2074	4.4800	.2418	.9488	.9792	1.0022
4	.0244	.8229	1.0000	.8542	.2199	4.2251	.3521	.9488	.9792	1.0022
5	.0315	.9967	1.0000	.8639	.2295	4.0476	.4174	.9488	.9792	1.0022
6	.0439	1.2121	1.0000	.8770	.2441	3.8067	.4923	.9488	.9792	1.0022
7	.0566	1.3539	1.0000	.8857	.2553	3.6398	.5376	.9488	.9792	1.0022
8	.0836	1.4981	1.0000	.8926	.2685	3.4600	.5800	.9488	.9792	1.0022
9	.1318	1.6481	1.0000	.8966	.2848	3.2629	.6197	.9488	.9792	1.0022
10	.1570	1.7043	1.0000	.8933	.2928	3.1735	.6319	.9488	.9792	1.0022
11	.2126	1.8022	1.0000	.8937	.3054	3.0427	.6544	.9488	.9792	1.0022
12	.2916	1.9038	1.0000	.8968	.3182	2.9199	.6772	.9488	.9792	1.0022
13	.4219	2.0918	1.0000	.9085	.3415	2.7210	.7182	.9488	.9792	1.0022
14	.6210	2.3462	1.0009	.9242	.3764	2.4705	.7676	.9494	.9795	1.0022
15	.8473	2.6142	1.0027	.9389	.4181	2.2279	.8122	.9506	.9800	1.0022
16	1.0079	2.8001	1.0039	.9519	.4481	2.0816	.8409	.9515	.9803	1.0021
17	1.1267	2.9359	1.0049	.9531	.4751	1.9650	.8566	.9521	.9806	1.0021
18	1.2870	3.1165	1.0061	.9472	.5171	1.8077	.8722	.9530	.9809	1.0021
19	1.5824	3.3960	1.0085	.9552	.5775	1.6225	.9004	.9546	.9816	1.0020
20	1.8087	3.5917	1.0102	.9605	.6229	1.5068	.9177	.9558	.9821	1.0019
21	2.1041	3.8132	1.0131	.9651	.6787	1.3868	.9347	.9577	.9829	1.0018
22	2.3701	3.9803	1.0172	.9702	.7230	1.3070	.9472	.9604	.9840	1.0017
23	2.7010	4.1617	1.0222	.9761	.7733	1.2281	.9600	.9638	.9854	1.0016
24	3.0762	4.3125	1.0279	.9826	.8168	1.1693	.9707	.9677	.9869	1.0014
25	3.3840	4.4180	1.0326	.9873	.8485	1.1308	.9779	.9708	.9882	1.0013
26	3.7305	4.5127	1.0379	.9926	.8776	1.0989	.9847	.9744	.9897	1.0011
27	4.0886	4.6006	1.0434	.9969	.9061	1.0699	.9905	.9781	.9912	1.0010
28	4.6218	4.6686	1.0529	.9989	.9346	1.0467	.9942	.9844	.9937	1.0007
* 29	4.9223	4.7158	1.0582	.9992	.9545	1.0300	.9962	.9880	.9952	1.0005
30	5.4526	4.7829	1.0676	.9998	.9849	1.0071	.9991	.9942	.9977	1.0002
** 31	5.9433	4.8042	1.0763	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
32	6.5524	4.8071	1.0871	1.0002	1.0108	.9992	1.0002	1.0072	1.0029	.9997
33	7.0409	4.7959	1.1017	1.0007	1.0200	1.0035	1.0000	1.0168	1.0067	.9993
34	7.4806	4.7933	1.1053	1.0013	1.0218	1.0051	1.0002	1.0192	1.0076	.9992
35	7.8676	4.7836	1.1181	1.0024	1.0290	1.0095	1.0004	1.0276	1.0109	.9988
36	8.3678	4.7728	1.1328	1.0029	1.0382	1.0138	1.0003	1.0372	1.0147	.9984
37	8.8875	4.7743	1.1308	1.0037	1.0361	1.0140	1.0007	1.0359	1.0142	.9985

TABLE 5 NOL BOUNDARY LAYER CHANNEL PROFILE DATA  
RUN NO 812122

STA = 1.448E+00 M ME = 4.780E+00 MPW = 4.901E+00 DELP = 5.255E+00 CM  
 PO = 5.098E+05 N/M2 DE = 6.627E-02 KG/M3 DPW = 6.174E-02 KG/M3 DSTRP = 1.752E+00 CM  
 TO = 3.537E+02 DEG.K TE = 6.350E+01 DEG.K TPW = 6.172E+01 DEG.K THP = 2.085E-01 CM  
 PSW = 1.082E+03 N/M2 UE = 7.636E+02 M/S UPW = 7.659E+02 M/S THEP = 3.841E-01 CM  
 TW = 2.960E+02 DEG.K RE = 1.192E+07 1/M RPW = 1.151E+07 1/M THMP = 1.060E-01 CM

N	Y(CM)	M	PS/PSW	IT/TTE	D/DE	T/TE	U/UE	DP/DPE	TP/TPE	UP/UPE
1	0.0000	0.0000	1.0000	.8369	.1942	4.6617	0.0000	.9316	.9720	1.0030
2	.0063	.1505	1.0000	.8386	.1947	4.6503	.0679	.9316	.9720	1.0030
3	.0063	.1656	1.0000	.8392	.1948	4.6492	.0747	.9316	.9720	1.0030
4	.0145	.3562	1.0000	.8435	.1976	4.5824	.1595	.9316	.9720	1.0030
5	.0269	.6003	1.0000	.8518	.2046	4.4258	.2642	.9316	.9720	1.0030
6	.0394	.8217	1.0000	.8614	.2142	4.2278	.3534	.9316	.9720	1.0030
7	.0518	1.0219	1.0000	.8716	.2255	4.0164	.4284	.9316	.9720	1.0030
8	.0744	1.2827	1.0000	.8856	.2440	3.7117	.5169	.9316	.9720	1.0030
9	.0970	1.4226	1.0000	.8926	.2558	3.5394	.5599	.9316	.9720	1.0030
10	.1240	1.5409	1.0000	.8949	.2679	3.3798	.5926	.9316	.9720	1.0030
11	.1631	1.6285	1.0000	.8939	.2783	3.2537	.6145	.9316	.9720	1.0030
12	.1941	1.6929	1.0000	.8931	.2863	3.1625	.6298	.9316	.9720	1.0030
13	.2598	1.7886	1.0000	.8925	.2987	3.0319	.6515	.9316	.9720	1.0030
14	.3134	1.8631	1.0000	.8940	.3081	2.9395	.6682	.9316	.9720	1.0030
15	.3731	1.9373	1.0000	.8963	.3175	2.8518	.6844	.9316	.9720	1.0030
16	.4354	2.0154	1.0000	.8992	.3277	2.7636	.7009	.9316	.9720	1.0030
17	.4803	2.0723	1.0000	.9013	.3353	2.7008	.7124	.9316	.9720	1.0030
18	.5349	2.1310	1.0003	.9035	.3434	2.6374	.7240	.9317	.9721	1.0030
19	.6622	2.2759	1.0015	.9098	.3643	2.4891	.7511	.9326	.9725	1.0030
20	.7724	2.4000	1.0026	.9148	.3834	2.3679	.7726	.9333	.9728	1.0029
21	.8915	2.5364	1.0038	.9205	.4054	2.2424	.7945	.9341	.9731	1.0029
22	.9931	2.6475	1.0048	.9247	.4242	2.1447	.8111	.9347	.9734	1.0029
23	1.1153	2.7827	1.0060	.9299	.4482	2.0324	.8299	.9355	.9737	1.0028
24	1.3444	3.0249	1.0082	.9384	.4943	1.8471	.8600	.9370	.9743	1.0028
25	1.4816	3.1663	1.0096	.9430	.5230	1.7480	.8757	.9379	.9747	1.0027
26	1.4790	3.1597	1.0096	.9427	.5217	1.7523	.8749	.9379	.9747	1.0027
27	1.6325	3.3097	1.0118	.9477	.5538	1.6545	.8905	.9394	.9753	1.0027
28	1.8049	3.4732	1.0146	.9521	.5912	1.5542	.9058	.9413	.9761	1.0026
29	2.0157	3.6472	1.0181	.9565	.6333	1.4557	.9205	.9436	.9770	1.0025
30	2.3033	3.8568	1.0228	.9620	.6870	1.3481	.9388	.9467	.9783	1.0023
31	2.5817	4.0292	1.0273	.9665	.7338	1.2677	.9490	.9497	.9796	1.0022
32	2.8143	4.1758	1.0312	.9708	.7749	1.2050	.9589	.9522	.9806	1.0021
33	3.1051	4.2922	1.0365	.9746	.8098	1.1589	.9666	.9557	.9820	1.0019
34	3.3282	4.3762	1.0421	.9775	.8371	1.1273	.9720	.9594	.9836	1.0018
35	3.5994	4.4608	1.0490	.9812	.8654	1.0976	.9776	.9640	.9854	1.0016
36	3.9754	4.5595	1.0586	.9846	.9015	1.0633	.9835	.9703	.9880	1.0013
37	4.3574	4.6363	1.0683	.9881	.9314	1.0387	.9885	.9766	.9906	1.0010
38	4.6533	4.6687	1.0759	.9908	.9460	1.0298	.9911	.9815	.9926	1.0008
39	4.9301	4.7175	1.0829	.9935	.9659	1.0153	.9944	.9861	.9944	1.0006
40	5.2548	4.7571	1.0912	.9964	.9838	1.0044	.9973	.9915	.9966	1.0004
41	5.5126	4.7691	1.0978	.9981	.9921	1.0020	.9986	.9957	.9983	1.0002
42	5.7800	4.7799	1.1046	1.0000	1.0000	1.0002	1.0000	1.0002	1.0001	1.0000
43	5.7706	4.7804	1.1043	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
44	6.0952	4.8130	1.1126	1.0024	1.0163	.9913	1.0024	1.0053	1.0021	.9998
45	6.3434	4.8077	1.1196	1.0035	1.0199	.9941	1.0027	1.0099	1.0039	.9996
46	6.6243	4.8077	1.1196	1.0046	1.0187	.9952	1.0033	1.0099	1.0039	.9996
47	6.8181	4.7998	1.1302	1.0055	1.0247	.9988	1.0035	1.0167	1.0066	.9993
48	7.0508	4.7920	1.1408	1.0063	1.0307	1.0023	1.0036	1.0235	1.0093	.9990
49	7.2738	4.7895	1.1443	1.0062	1.0331	1.0030	1.0034	1.0257	1.0102	.9989
50	7.5453	4.7922	1.1407	1.0051	1.0318	1.0011	1.0030	1.0234	1.0093	.9990
51	8.0145	4.7794	1.1584	1.0063	1.0420	1.0067	1.0031	1.0347	1.0138	.9985
52	8.3487	4.7743	1.1655	1.0066	1.0463	1.0087	1.0030	1.0393	1.0155	.9983
53	8.6733	4.7616	1.1835	1.0064	1.0580	1.0130	1.0025	1.0507	1.0200	.9978
54	8.8834	4.7591	1.1871	1.0064	1.0603	1.0138	1.0024	1.0530	1.0209	.9978
55	8.9886	4.7565	1.1907	1.0064	1.0626	1.0147	1.0023	1.0553	1.0217	.9977
56	9.0744	4.7515	1.1979	1.0063	1.0673	1.0163	1.0021	1.0598	1.0235	.9975

TABLE 5 NOL BOUNDARY LAYER CHANNEL PROFILE DATA  
RUN NO 901312

STA = 1.448E+00 M ME = 4.755E+00 MPW = 4.847E+00 DELP = 6.762E+00 CM  
 PO = 1.032E+05 N/M2 DE = 1.390E-02 KG/M3 DPW = 1.303E-02 KG/M3 DSTRP = 2.327E+00 CM  
 TO = 3.543E+02 DEG.K TE = 6.416E+01 DEG.K TPW = 6.252E+01 DEG.K THP = 2.948E-01 CM  
 PSW = 2.336E+02 N/M2 UE = 7.636E+02 M/S UPW = 7.657E+02 M/S THEP = 5.397E-01 CM  
 TW = 2.998E+02 DEG.K RE = 2.471E+06 1/M RPW = 2.392E+06 1/M THMP = 1.793E-01 CM

N	Y(CM)	M	PS/PSW	TT/TTE	D/DE	T/TE	U/UE	DP/DPE	TP/TPE	UP/UPE
1	0.0000	0.0000	1.0000	.8461	.1955	4.6729	0.0000	.9373	.9744	1.0028
2	.0063	0.0000	1.0000	.8461	.1955	4.6729	0.0000	.9373	.9744	1.0028
3	.0081	0.0000	1.0000	.8441	.1959	4.6615	0.0000	.9373	.9744	1.0028
4	.0135	.0228	1.0000	.8433	.1961	4.6570	.0104	.9373	.9744	1.0028
5	.0188	.0420	1.0000	.8427	.1963	4.6525	.0190	.9373	.9744	1.0028
6	.0262	.0867	1.0000	.8418	.1968	4.6418	.0393	.9373	.9744	1.0028
7	.0368	.1608	1.0000	.8415	.1976	4.6233	.0727	.9373	.9744	1.0028
8	.0457	.2298	1.0000	.8426	.1984	4.6046	.1037	.9373	.9744	1.0028
9	.0531	.3327	1.0000	.8492	.1991	4.5884	.1499	.9373	.9744	1.0028
10	.0762	.5049	1.0000	.8548	.2033	4.4918	.2250	.9373	.9744	1.0028
11	.1049	.7611	1.0000	.8643	.2135	4.2776	.3310	.9373	.9744	1.0028
12	.1570	1.0853	1.0000	.8794	.2324	3.9305	.4525	.9373	.9744	1.0028
13	.1966	1.2795	1.0000	.8854	.2480	3.6834	.5164	.9373	.9744	1.0028
14	.2484	1.4191	1.0000	.8922	.2600	3.5127	.5593	.9373	.9744	1.0028
15	.3023	1.5402	1.0000	.8944	.2726	3.3500	.5928	.9373	.9744	1.0028
16	.3386	1.6169	1.0000	.8954	.2813	3.2471	.6127	.9373	.9744	1.0028
17	.3759	1.6914	1.0000	.8977	.2897	3.1533	.6316	.9373	.9744	1.0028
18	.4181	1.7320	1.0000	.9002	.2939	3.1073	.6420	.9373	.9744	1.0028
19	.4862	1.8237	1.0000	.9016	.3054	2.9902	.6632	.9373	.9744	1.0028
20	.5654	1.8944	1.0002	.9003	.3156	2.8946	.6778	.9375	.9745	1.0028
21	.6579	1.9820	1.0006	.8985	.3289	2.7790	.6948	.9377	.9746	1.0028
22	.7117	2.0420	1.0008	.8978	.3381	2.7035	.7061	.9378	.9747	1.0028
23	.7996	2.1154	1.0011	.8971	.3497	2.6145	.7193	.9381	.9748	1.0028
24	.8745	2.1862	1.0014	.8979	.3608	2.5354	.7320	.9383	.9748	1.0028
25	.9314	2.2260	1.0017	.8981	.3673	2.4910	.7388	.9384	.9749	1.0028
26	.9909	2.2772	1.0019	.8982	.3758	2.4350	.7473	.9386	.9750	1.0027
27	1.1034	2.3801	1.0023	.9007	.3926	2.3320	.7643	.9389	.9751	1.0027
28	1.1859	2.4362	1.0027	.9019	.4021	2.2774	.7731	.9391	.9752	1.0027
29	1.3211	2.5273	1.0032	.9040	.4180	2.1920	.7869	.9395	.9753	1.0027
30	1.5573	2.7275	1.0041	.9101	.4540	2.0203	.8152	.9401	.9756	1.0027
31	1.7739	2.9131	1.0050	.9158	.4895	1.8751	.8389	.9406	.9758	1.0027
32	1.9708	3.0441	1.0058	.9200	.5159	1.7806	.8542	.9412	.9760	1.0026
33	2.2662	3.2710	1.0089	.9267	.5654	1.6299	.8782	.9433	.9769	1.0025
34	2.5512	3.4638	1.0125	.9323	.6106	1.5146	.8964	.9456	.9779	1.0024
35	2.8207	3.6573	1.0158	.9380	.6582	1.4095	.9131	.9479	.9788	1.0023
36	3.0899	3.8282	1.0192	.9433	.7025	1.3252	.9267	.9501	.9797	1.0022
37	3.3304	3.9569	1.0222	.9477	.7370	1.2668	.9366	.9521	.9806	1.0021
38	3.5999	4.0920	1.0256	.9518	.7750	1.2087	.9461	.9544	.9815	1.0020
39	3.9378	4.2264	1.0306	.9585	.8131	1.1577	.9563	.9577	.9829	1.0019
40	4.2093	4.3167	1.0346	.9650	.8381	1.1275	.9639	.9604	.9840	1.0018
41	4.6746	4.4474	1.0415	.9729	.8774	1.0841	.9738	.9649	.9858	1.0016
42	4.9751	4.5118	1.0460	.9776	.8973	1.0646	.9790	.9679	.9870	1.0014
43	5.3317	4.5788	1.0512	.9819	.9195	1.0442	.9839	.9714	.9884	1.0013
44	5.6492	4.6371	1.0563	.9856	.9396	1.0269	.9882	.9747	.9898	1.0011
45	5.9091	4.6697	1.0620	.9887	.9524	1.0185	.9910	.9784	.9913	1.0010
46	6.1689	4.6894	1.0676	.9918	.9610	1.0147	.9934	.9821	.9928	1.0008
47	6.4691	4.7155	1.0741	.9940	.9735	1.0078	.9955	.9864	.9945	1.0006
48	6.7620	4.7278	1.0805	.9964	.9811	1.0059	.9971	.9906	.9962	1.0004
49	7.0846	4.7437	1.0875	.9982	.9910	1.0022	.9987	.9952	.9981	1.0002
50	7.4265	4.7553	1.0949	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
51	7.6891	4.7640	1.1006	1.0015	1.0067	.9985	1.0011	1.0037	1.0015	.9998
52	8.0546	4.7625	1.1085	1.0030	1.0120	1.0005	1.0018	1.0089	1.0035	.9996
53	8.3431	4.7587	1.1137	1.0035	1.0148	1.0024	1.0019	1.0123	1.0049	.9995
54	8.5837	4.7523	1.1221	1.0040	1.0198	1.0050	1.0019	1.0177	1.0070	.9992
55	8.8146	4.7474	1.1288	1.0041	1.0240	1.0068	1.0017	1.0220	1.0088	.9990
56	9.0071	4.7402	1.1388	1.0046	1.0299	1.0099	1.0017	1.0285	1.0113	.9988

TABLE 5 NOL BOUNDARY LAYER CHANNEL PROFILE DATA  
RUN NO 812131

STA = 1.702E+00 M	ME = 4.816E+00	MPW = 4.847E+00	DELP = 6.075E+00 CM
PO = 1.035E+06 N/M2	DE = 1.320E-01 KG/M3	DPW = 1.320E-01 KG/M3	DSTRP = 1.803E+00 CM
TO = 3.512E+02 DEG.K	TE = 6.228E+01 DEG.K	TPW = 6.228E+01 DEG.K	THP = 2.156E-01 CM
PSW = 2.343E+03 N/M2	UE = 7.619E+02 M/S	UPW = 7.619E+02 M/S	THEP = 3.967E-01 CM
TW = 2.943E+02 DEG.K	RE = 2.422E+07 1/M	RPW = 2.422E+07 1/M	THMP = 1.072E-01 CM

N	Y(CM)	M	PS/PSW	TT/TTE	D/DE	T/TTE	U/UE	DP/DPE	TP/TPE	UP/UPE
1	0.0000	0.0000	1.0000	.8381	.2116	4.7259	0.0000	1.0000	1.0000	1.0000
2	.0063	.2926	1.0000	.8405	.2146	4.6596	.1312	1.0000	1.0000	1.0000
3	.0320	.8508	1.0000	.8591	.2363	4.2318	.3634	1.0000	1.0000	1.0000
4	.0518	1.1958	1.0000	.8751	.2606	3.8370	.4864	1.0000	1.0000	1.0000
5	.1029	1.4819	1.0000	.8888	.2872	3.4823	.5742	1.0000	1.0000	1.0000
6	.1897	1.6341	1.0000	.8869	.3068	3.2599	.6126	1.0000	1.0000	1.0000
7	.3515	1.8209	1.0000	.8957	.3293	3.0368	.6589	1.0000	1.0000	1.0000
8	.4587	1.9494	1.0000	.9012	.3464	2.8872	.6878	1.0000	1.0000	1.0000
9	.5903	2.0984	1.0000	.9077	.3675	2.7214	.7188	1.0000	1.0000	1.0000
10	.7236	2.2398	1.0000	.9140	.3887	2.5727	.7460	1.0000	1.0000	1.0000
11	.8344	2.3616	1.0000	.9185	.4084	2.4483	.7673	1.0000	1.0000	1.0000
12	.9472	2.4804	1.0000	.9241	.4281	2.3361	.7872	1.0000	1.0000	1.0000
13	1.0676	2.6370	1.0000	.9305	.4556	2.1947	.8112	1.0000	1.0000	1.0000
14	1.2550	2.8325	1.0000	.9377	.4926	2.0300	.8380	1.0000	1.0000	1.0000
15	1.4841	3.0980	1.0000	.9488	.5457	1.8325	.8708	1.0000	1.0000	1.0000
16	1.7046	3.3152	1.0000	.9550	.5939	1.6839	.8932	1.0000	1.0000	1.0000
17	1.9441	3.5330	1.0000	.9603	.6457	1.5486	.9129	1.0000	1.0000	1.0000
18	2.1742	3.7115	1.0000	.9630	.6915	1.4461	.9267	1.0000	1.0000	1.0000
19	2.3851	3.8768	1.0000	.9666	.7350	1.3606	.9390	1.0000	1.0000	1.0000
20	2.7597	4.1040	1.0000	.9690	.7995	1.2508	.9530	1.0000	1.0000	1.0000
21	3.0965	4.2536	1.0000	.9731	.8417	1.1880	.9627	1.0000	1.0000	1.0000
22	3.3660	4.3593	1.0000	.9762	.8721	1.1466	.9693	1.0000	1.0000	1.0000
23	3.7412	4.4848	1.0000	.9806	.9084	1.1008	.9771	1.0000	1.0000	1.0000
24	4.0076	4.5391	1.0000	.9830	.9238	1.0825	.9806	1.0000	1.0000	1.0000
25	4.3772	4.6367	1.0000	.9868	.9525	1.0499	.9865	1.0000	1.0000	1.0000
26	4.6330	4.6721	1.0000	.9902	.9610	1.0406	.9896	1.0000	1.0000	1.0000
27	4.9741	4.6833	1.0000	.9916	.9634	1.0380	.9908	1.0000	1.0000	1.0000
28	5.2738	4.7237	1.0000	.9933	.9753	1.0254	.9932	1.0000	1.0000	1.0000
29	5.6843	4.7526	1.0000	.9932	.9852	1.0150	.9942	1.0000	1.0000	1.0000
* 30	6.0749	4.7717	1.0000	.9972	.9877	1.0124	.9969	1.0000	1.0000	1.0000
31	6.4440	4.7876	1.0000	.9986	.9917	1.0084	.9982	1.0000	1.0000	1.0000
32	6.6921	4.8065	1.0000	1.0001	.9967	1.0033	.9997	1.0000	1.0000	1.0000
** 33	7.1029	4.8160	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
34	7.4178	4.8380	1.0000	1.0031	1.0044	.9956	1.0024	1.0000	1.0000	1.0000
35	7.7521	4.8599	1.0000	1.0048	1.0102	.9899	1.0040	1.0000	1.0000	1.0000

TABLE 5 NOL BOUNDARY LAYER CHANNEL PROFILE DATA  
RUN NO 812132

STA = 1.702E+00 M ME = 4.812E+00 MPW = 4.853E+00 DELP = 5.409E+00 CM  
 PO = 5.151E+05 N/M2 DE = 6.510E-02 KG/M3 DPW = 6.497E-02 KG/M3 DSTRP = 1.866E+00 CM  
 TO = 3.512E+02 DEG.K TE = 6.238E+01 DEG.K TPW = 6.233E+01 DEG.K THP = 2.178E-01 CM  
 PSW = 1.158E+03 N/M2 UE = 7.618E+02 M/S UPW = 7.619E+02 M/S THEP = 3.971E-01 CM  
 TW = 2.957E+02 DEG.K RE = 1.192E+07 1/M RPW = 1.191E+07 1/M THMP = 1.061E-01 CM

N	Y(CM)	M	PS/PSW	TT/TTE	D/DE	T/TE	U/UE	DP/DPE	TP/TPE	UP/UPE
1	0.0000	0.0000	1.0000	.8417	.2104	4.7393	0.0000	.9980	.9992	1.0001
2	.0063	.1263	1.0000	.8437	.2106	4.7351	.0571	.9980	.9992	1.0001
3	.0104	.2145	1.0000	.8459	.2113	4.7192	.0968	.9980	.9992	1.0001
4	.0262	.4524	1.0000	.8533	.2160	4.6153	.2020	.9980	.9992	1.0001
5	.0358	.6332	1.0000	.8602	.2224	4.4836	.2787	.9980	.9992	1.0001
6	.0536	.9719	1.0000	.8763	.2403	4.1497	.4115	.9980	.9992	1.0001
7	.0833	1.2212	1.0000	.8890	.2586	3.8556	.4984	.9980	.9992	1.0001
8	.1148	1.3720	1.0000	.8935	.2728	3.6549	.5451	.9980	.9992	1.0001
9	.1778	1.5105	1.0000	.8923	.2891	3.4496	.5831	.9980	.9992	1.0001
10	.2332	1.5900	1.0000	.8913	.2992	3.3331	.6033	.9980	.9992	1.0001
11	.3383	1.7106	1.0000	.8928	.3144	3.1711	.6331	.9980	.9992	1.0001
12	.4455	1.8269	1.0000	.8967	.3294	3.0275	.6607	.9980	.9992	1.0001
13	.5639	1.9397	1.0000	.9007	.3446	2.8939	.6858	.9980	.9992	1.0001
14	.6896	2.0897	1.0000	.9067	.3659	2.7251	.7169	.9980	.9992	1.0001
15	.8006	2.1985	1.0000	.9115	.3821	2.6094	.7381	.9980	.9992	1.0001
16	.9208	2.3098	1.0000	.9162	.3995	2.4956	.7584	.9980	.9992	1.0001
17	1.0312	2.4157	1.0000	.9206	.4169	2.3917	.7764	.9980	.9992	1.0001
18	1.1460	2.5321	1.0000	.9254	.4368	2.2829	.7951	.9980	.9992	1.0001
19	1.2426	2.6434	1.0000	.9294	.4568	2.1828	.8116	.9980	.9992	1.0001
20	1.5108	2.9106	1.0000	.9390	.5081	1.9624	.8474	.9980	.9992	1.0001
21	1.7506	3.1956	1.0000	.9472	.5688	1.7530	.8793	.9980	.9992	1.0001
22	1.9901	3.4020	1.0000	.9529	.6161	1.6185	.8995	.9980	.9992	1.0001
23	2.2299	3.6106	1.0000	.9579	.6669	1.4952	.9176	.9980	.9992	1.0001
24	2.4407	3.8011	1.0000	.9620	.7160	1.3926	.9322	.9980	.9992	1.0001
25	2.6617	3.9759	1.0001	.9658	.7632	1.3066	.9445	.9980	.9992	1.0001
26	2.9022	4.1371	1.0003	.9696	.8081	1.2343	.9552	.9981	.9993	1.0001
27	3.1427	4.2508	1.0005	.9725	.8406	1.1868	.9624	.9983	.9993	1.0001
28	3.3543	4.3500	1.0006	.9754	.8693	1.1478	.9686	.9984	.9994	1.0001
29	3.5756	4.4300	1.0008	.9782	.8923	1.1184	.9736	.9985	.9994	1.0001
30	3.7681	4.4917	1.0009	.9805	.9103	1.0964	.9775	.9986	.9995	1.0001
31	3.9959	4.5581	1.0011	.9829	.9299	1.0735	.9815	.9988	.9995	1.0001
32	4.2426	4.6126	1.0013	.9855	.9456	1.0559	.9851	.9989	.9996	1.0000
33	4.4699	4.6556	1.0015	.9877	.9580	1.0424	.9878	.9990	.9996	1.0000
34	4.7353	4.7089	1.0017	.9902	.9737	1.0258	.9912	.9992	.9997	1.0000
35	4.9342	4.7351	1.0018	.9918	.9811	1.0182	.9930	.9993	.9997	1.0000
36	5.1351	4.7507	1.0020	.9932	.9851	1.0142	.9943	.9994	.9998	1.0000
* 37	5.4087	4.7713	1.0022	.9949	.9906	1.0088	.9960	.9995	.9998	1.0000
38	5.6528	4.7814	1.0024	.9964	.9927	1.0068	.9971	.9997	.9999	1.0000
39	5.9949	4.8017	1.0027	.9986	.9978	1.0020	.9989	.9998	.9999	1.0000
** 40	6.2682	4.8117	1.0029	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
41	6.5565	4.8163	1.0031	1.0008	1.0010	.9992	1.0006	1.0002	1.0001	1.0000
42	6.9195	4.8365	1.0034	1.0020	1.0070	.9936	1.0019	1.0004	1.0001	1.0000
43	7.2060	4.8515	1.0036	1.0029	1.0115	.9894	1.0029	1.0005	1.0002	1.0000
44	7.5400	4.8407	1.0165	1.0028	1.0208	.9930	1.0025	1.0097	1.0039	.9996
45	7.9411	4.8406	1.0165	1.0037	1.0199	.9938	1.0029	1.0097	1.0039	.9996
46	8.2659	4.8301	1.0294	1.0035	1.0293	.9972	1.0024	1.0188	1.0075	.9992
47	8.6096	4.8197	1.0423	1.0034	1.0387	1.0006	1.0020	1.0279	1.0111	.9988
48	8.9532	4.8189	1.0433	1.0037	1.0390	1.0013	1.0021	1.0286	1.0114	.9988

TABLE 5 NOL BOUNDARY LAYER CHANNEL PROFILE DATA  
RUN NO 812133

STA = 1.702E+00 M ME = 4.766E+00 MPW = 4.793E+00 DELP = 7.097E+00 CM  
 PO = 1.033E+05 N/M2 DE = 1.388E-02 KG/M3 DPW = 1.382E-02 KG/M3 DSTRP = 2.532E+00 CM  
 TO = 3.525E+02 DEG.K TE = 6.359E+01 DEG.K TPW = 6.349E+01 DEG.K THP = 3.122E-01 CM  
 PSW = 2.496E+02 N/M2 UE = 7.619E+02 M/S UPW = 7.620E+02 M/S THEP = 5.665E-01 CM  
 TW = 2.970E+02 DEG.K RE = 2.487E+06 1/M RPW = 2.482E+06 1/M THHP = 1.764E-01 CM

N	Y(CM)	M	PS/PSW	TT/TTE	D/DE	T/TE	U/UE	OP/DPE	TP/TPE	UP/UPE
1	0.0000	0.0000	1.0000	.8426	.2129	4.6709	0.0000	.9959	.9984	1.0002
2	.0063	.0238	1.0000	.8435	.2127	4.6754	.0108	.9959	.9984	1.0002
3	.0104	.0418	1.0000	.8427	.2129	4.6700	.0189	.9959	.9984	1.0002
4	.0183	.0743	1.0000	.8431	.2130	4.6687	.0337	.9959	.9984	1.0002
5	.0262	.1346	1.0000	.8446	.2131	4.6652	.0610	.9959	.9984	1.0002
6	.0399	.1744	1.0000	.8532	.2115	4.7011	.0793	.9959	.9984	1.0002
7	.0498	.2755	1.0000	.8571	.2124	4.6802	.1250	.9959	.9984	1.0002
8	.0853	.5782	1.0000	.8677	.2205	4.5084	.2576	.9959	.9984	1.0002
9	.1128	.8078	1.0000	.8735	.2321	4.2830	.3507	.9959	.9984	1.0002
10	.1760	1.1168	1.0000	.8914	.2514	3.9548	.4660	.9959	.9984	1.0002
11	.2273	1.3067	1.0000	.9012	.2670	3.7240	.5291	.9959	.9984	1.0002
12	.3157	1.4897	1.0000	.9024	.2870	3.4646	.5818	.9959	.9984	1.0002
13	.4171	1.6209	1.0000	.8988	.3044	3.2660	.6146	.9959	.9984	1.0002
14	.5431	1.7189	1.0000	.8975	.3180	3.1270	.6377	.9959	.9984	1.0002
15	.6594	1.8060	1.0000	.8950	.3311	3.0026	.6566	.9959	.9984	1.0002
16	.7798	1.8944	1.0000	.8947	.3443	2.8874	.6754	.9959	.9984	1.0002
17	.8926	1.9449	1.0000	.8986	.3506	2.8359	.6872	.9959	.9984	1.0002
18	1.0272	2.0306	1.0000	.9025	.3626	2.7416	.7054	.9959	.9984	1.0002
19	1.1956	2.1734	1.0000	.9043	.3857	2.5777	.7321	.9959	.9984	1.0002
20	1.3729	2.3213	1.0000	.9067	.4110	2.4192	.7575	.9959	.9984	1.0002
21	1.6604	2.5593	1.0000	.9125	.4540	2.1897	.7946	.9959	.9984	1.0002
22	1.9576	2.7724	1.0000	.9180	.4957	2.0055	.8238	.9959	.9984	1.0002
23	2.2451	2.9703	1.0000	.9224	.5375	1.8496	.8475	.9959	.9984	1.0002
24	2.5806	3.2052	1.0000	.9286	.5900	1.6852	.8730	.9959	.9984	1.0002
25	2.8788	3.4347	1.0004	.9344	.6451	1.5419	.8948	.9962	.9985	1.0002
26	3.1290	3.6167	1.0007	.9390	.6911	1.4395	.9104	.9964	.9985	1.0002
27	3.3599	3.7619	1.0009	.9441	.7284	1.3663	.9226	.9966	.9986	1.0002
28	3.6678	3.9341	1.0013	.9511	.7733	1.2874	.9365	.9968	.9987	1.0001
29	3.9543	4.0779	1.0016	.9569	.8122	1.2262	.9474	.9970	.9988	1.0001
30	4.5512	4.2800	1.0023	.9676	.8665	1.1501	.9630	.9975	.9990	1.0001
31	4.8357	4.3842	1.0027	.9715	.8967	1.1117	.9699	.9978	.9991	1.0001
32	5.0823	4.5453	1.0029	.9753	.9466	1.0535	.9788	.9980	.9992	1.0001
33	5.3558	4.5611	1.0033	.9792	.9483	1.0518	.9815	.9982	.9993	1.0001
34	5.6490	4.6129	1.0036	.9824	.9630	1.0362	.9852	.9984	.9994	1.0001
35	5.9225	4.6465	1.0039	.9840	.9731	1.0257	.9874	.9987	.9995	1.0001
36	6.3426	4.6913	1.0044	.9900	.9830	1.0159	.9921	.9990	.9996	1.0000
* 37	7.0970	4.7389	1.0053	.9976	.9925	1.0070	.9977	.9996	.9998	1.0000
38	7.2974	4.7410	1.0055	.9987	.9923	1.0074	.9984	.9998	.9999	1.0000
** 39	7.5552	4.7662	1.0058	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
40	7.8130	4.7668	1.0061	1.0010	.9995	1.0008	1.0005	1.0002	1.0001	1.0000
41	8.0137	4.7814	1.0063	1.0018	1.0040	.9966	1.0015	1.0004	1.0002	1.0000
42	8.3383	4.7884	1.0067	1.0036	1.0050	.9960	1.0026	1.0006	1.0003	1.0000
43	8.6342	4.7881	1.0071	1.0043	1.0046	.9968	1.0030	1.0009	1.0004	1.0000
44	8.9685	4.7911	1.0034	1.0048	1.0014	.9962	1.0033	.9983	.9993	1.0001

TABLE 5 NOL BOUNDARY LAYER CHANNEL PROFILE DATA  
RUN NO 812161

STA = 1.905E+00 M	ME = 4.864E+00	MPW = 4.911E+00	DELP = 4.873E+00 CM
PO = 1.078E+06 N/M2	DE = 1.304E-01 KG/M3	DPW = 1.253E-01 KG/M3	DSTRP = 1.746E+00 CM
TO = 3.554E+02 DEG.K	TE = 6.201E+01 DEG.K	TPW = 6.101E+01 DEG.K	THP = 1.957E-01 CM
PSW = 2.262E+03 N/M2	UE = 7.679E+02 M/S	UPW = 7.692E+02 M/S	THEP = 3.577E-01 CM
TH = 2.965E+02 DEG.K	RE = 2.424E+07 1/M	RPW = 2.376E+07 1/M	THHP = 9.004E-02 CM

N	Y(CM)	M	PS/PSW	TT/TTE	D/DE	T/TE	U/UE	DP/DPE	TP/TPE	UP/UPE
1	0.0000	0.0000	1.0000	.8341	.1977	4.7813	0.0000	.9605	.9840	1.0017
2	.0063	.2696	1.0000	.8350	.2003	4.7180	.1204	.9605	.9840	1.0017
3	.0084	.3516	1.0000	.8365	.2020	4.6796	.1563	.9605	.9840	1.0017
4	.0122	.4748	1.0000	.8400	.2051	4.6075	.2095	.9605	.9840	1.0017
5	.0262	.8503	1.0000	.8528	.2213	4.2714	.3612	.9605	.9840	1.0017
6	.0419	1.1116	1.0000	.8651	.2377	3.9767	.4557	.9605	.9840	1.0017
7	.0676	1.3443	1.0000	.8770	.2559	3.6926	.5310	.9605	.9840	1.0017
8	.0970	1.4744	1.0000	.8843	.2675	3.5332	.5697	.9605	.9840	1.0017
9	.1384	1.5993	1.0000	.8827	.2823	3.3475	.6015	.9605	.9840	1.0017
10	.1938	1.6908	1.0000	.8813	.2940	3.2143	.6232	.9605	.9840	1.0017
11	.2489	1.7651	1.0000	.8836	.3029	3.1206	.6410	.9605	.9840	1.0017
12	.3653	1.9091	1.0000	.8902	.3202	2.9515	.6742	.9605	.9840	1.0017
13	.4773	2.0303	1.0000	.8942	.3363	2.8099	.6996	.9605	.9840	1.0017
14	.5837	2.1386	1.0000	.9002	.3507	2.6950	.7217	.9605	.9840	1.0017
15	.7676	2.3186	1.0000	.9091	.3763	2.5115	.7554	.9605	.9840	1.0017
16	.9329	2.4971	1.0000	.9175	.4038	2.3408	.7854	.9605	.9840	1.0017
17	1.1179	2.6882	1.0005	.9281	.4346	2.1757	.8151	.9608	.9841	1.0017
18	1.2636	2.8427	1.0013	.9356	.4616	2.0500	.8367	.9614	.9844	1.0017
19	1.2654	2.8427	1.0013	.9353	.4618	2.0494	.8366	.9614	.9844	1.0017
20	1.3924	2.9890	1.0020	.9415	.4889	1.9367	.8551	.9618	.9845	1.0016
21	1.6706	3.2783	1.0034	.9508	.5479	1.7307	.8866	.9628	.9850	1.0016
22	1.9484	3.5432	1.0049	.9579	.6072	1.5641	.9109	.9638	.9854	1.0015
23	2.2550	3.8248	1.0065	.9661	.6743	1.4108	.9339	.9649	.9858	1.0015
24	2.5715	4.0723	1.0083	.9727	.7377	1.2917	.9514	.9661	.9863	1.0014
25	3.1488	4.4195	1.0137	.9793	.8373	1.1442	.9718	.9698	.9878	1.0013
26	3.7165	4.6189	1.0190	.9876	.8959	1.0749	.9844	.9735	.9893	1.0011
27	4.2807	4.7827	1.0243	.9923	.9487	1.0204	.9932	.9771	.9908	1.0010
* 28	4.8727	4.8561	1.0318	.9953	.9770	.9981	.9973	.9822	.9928	1.0008
29	5.4353	4.8398	1.0407	1.0006	.9748	1.0090	.9994	.9882	.9953	1.0005
30	6.0284	4.9056	1.0501	1.0023	1.0041	.9884	1.0026	.9946	.9978	1.0002
** 31	6.5296	4.8645	1.0581	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
32	7.1498	4.8564	1.0683	1.0021	1.0047	1.0049	1.0008	1.0069	1.0027	.9997
33	7.7366	4.8580	1.0663	1.0052	1.0004	1.0074	1.0023	1.0055	1.0022	.9998
34	8.3335	4.8727	1.0480	1.0053	.9880	1.0025	1.0029	.9932	.9973	1.0003
35	8.9306	4.8629	1.0602	1.0062	.9953	1.0067	1.0030	1.0014	1.0006	.9999



TABLE 5 NOL BOUNDARY LAYER CHANNEL PROFILE DATA  
RUN NO 812162

STA = 1.905E+00 M      ME = 4.855E+00      MPW = 4.846E+00      DELP = 5.698E+00 CM  
 PO = 5.171E+05 N/M2      DE = 6.554E-02 KG/M3      OPW = 6.592E-02 KG/M3      DSTRP = 2.050E+00 CM  
 TO = 3.555E+02 DEG.K      TE = 6.222E+01 DEG.K      TPW = 6.237E+01 DEG.K      THP = 2.405E-01 CM  
 PSW = 1.171E+03 N/M2      UE = 7.676E+02 M/S      UPW = 7.675E+02 M/S      THEP = 4.374E-01 CM  
 TW = 2.951E+02 DEG.K      RE = 1.213E+07 1/M      RPW = 1.217E+07 1/M      THMP = 1.228E-01 CM

N	Y(CM)	M	PS/PSW	IT/TTE	D/DE	T/TE	U/UE	OP/DPE	TP/TPE	UP/UPE
1	0.0000	0.0000	1.0000	.8300	.2126	4.7422	0.0000	1.0058	1.0023	.9998
2	.0063	.1565	1.0000	.8317	.2132	4.7287	.0701	1.0058	1.0023	.9998
3	.0142	.3021	1.0000	.8361	.2149	4.6912	.1348	1.0058	1.0023	.9998
4	.0262	.5228	1.0000	.8432	.2207	4.5677	.2302	1.0058	1.0023	.9998
5	.0358	.7043	1.0000	.8480	.2287	4.4075	.3046	1.0058	1.0023	.9998
6	.0635	1.0673	1.0000	.8639	.2508	4.0198	.4408	1.0058	1.0023	.9998
7	.0991	1.3084	1.0000	.8787	.2696	3.7400	.5212	1.0058	1.0023	.9998
8	.1285	1.4127	1.0000	.8823	.2798	3.6030	.5524	1.0058	1.0023	.9998
9	.1819	1.5089	1.0000	.8802	.2918	3.4556	.5778	1.0058	1.0023	.9998
10	.2410	1.5821	1.0000	.8802	.3008	3.3513	.5966	1.0058	1.0023	.9998
11	.3040	1.6546	1.0000	.8813	.3098	3.2538	.6148	1.0058	1.0023	.9998
12	.4117	1.7610	1.0000	.8850	.3231	3.1208	.6408	1.0058	1.0023	.9998
13	.5217	1.8609	1.0000	.8891	.3359	3.0013	.6641	1.0058	1.0023	.9998
14	.6284	1.9554	1.0000	.8930	.3487	2.8912	.6849	1.0058	1.0023	.9998
15	.7409	2.0540	1.0000	.8972	.3627	2.7800	.7055	1.0058	1.0023	.9998
16	.8743	2.1704	1.0000	.9027	.3796	2.6557	.7286	1.0058	1.0023	.9998
17	.9812	2.2642	1.0000	.9067	.3942	2.5577	.7459	1.0058	1.0023	.9998
18	1.0988	2.3683	1.0000	.9113	.4108	2.4539	.7642	1.0058	1.0023	.9998
19	1.2167	2.4768	1.0000	.9159	.4290	2.3499	.7821	1.0058	1.0023	.9998
20	1.3866	2.6457	1.0000	.9227	.4590	2.1966	.8077	1.0058	1.0023	.9998
21	1.6645	2.9045	1.0000	.9327	.5084	1.9831	.8425	1.0058	1.0023	.9998
22	1.9713	3.1834	1.0000	.9422	.5669	1.7785	.8745	1.0058	1.0023	.9998
23	2.2685	3.4486	1.0000	.9498	.6277	1.6063	.9003	1.0058	1.0023	.9998
24	2.5463	3.7039	1.0000	.9567	.6905	1.4600	.9219	1.0058	1.0023	.9998
25	2.8158	3.9271	.9995	.9620	.7489	1.3457	.9384	1.0055	1.0022	.9998
26	3.1333	4.1325	.9990	.9670	.8050	1.2512	.9522	1.0051	1.0021	.9998
27	3.3929	4.2733	.9986	.9700	.8451	1.1913	.9608	1.0048	1.0019	.9998
28	3.7104	4.3991	.9981	.9743	.8804	1.1430	.9688	1.0045	1.0018	.9998
29	3.9977	4.5042	.9976	.9776	.9107	1.1044	.9751	1.0041	1.0016	.9998
30	4.2939	4.5960	.9971	.9811	.9370	1.0729	.9806	1.0038	1.0015	.9998
31	4.5804	4.6639	.9966	.9845	.9557	1.0513	.9851	1.0034	1.0014	.9999
32	4.8666	4.7101	.9962	.9874	.9679	1.0376	.9883	1.0031	1.0012	.9999
33	5.1234	4.7395	.9957	.9892	.9756	1.0290	.9903	1.0028	1.0011	.9999
34	5.4292	4.7679	.9952	.9924	.9816	1.0222	.9930	1.0024	1.0010	.9999
35	5.6982	4.7895	.9948	.9954	.9854	1.0178	.9953	1.0021	1.0008	.9999
36	6.0135	4.8123	.9943	.9972	.9909	1.0117	.9970	1.0017	1.0007	.9999
37	6.2636	4.8240	.9939	.9983	.9933	1.0088	.9980	1.0014	1.0006	.9999
38	6.5532	4.8306	.9934	.9987	.9946	1.0069	.9985	1.0011	1.0004	1.0000
39	6.8486	4.8371	.9929	.9992	.9959	1.0052	.9990	1.0007	1.0003	1.0000
40	7.1735	4.8481	.9924	.9999	.9984	1.0021	.9997	1.0004	1.0001	1.0000
41	7.4689	4.8546	.9919	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
42	7.7211	4.8568	.9893	.9999	.9983	.9991	1.0000	.9981	.9993	1.0001
43	8.0434	4.8556	.9906	1.0021	.9970	1.0018	1.0011	.9991	.9996	1.0000
44	8.3373	4.8562	.9900	1.0028	.9958	1.0023	1.0015	.9986	.9994	1.0001
45	8.6121	4.8540	.9925	1.0034	.9971	1.0036	1.0017	1.0005	1.0002	1.0000
46	8.9248	4.8513	.9958	1.0034	.9994	1.0045	1.0016	1.0028	1.0011	.9999

TABLE 5 NOL BOUNDARY LAYER CHANNEL PROFILE DATA  
RUN NO 901298

STA = 1.905E+00 M ME = 4.788E+00 MPW = 4.814E+00 DELP = 7.454E+00 CM  
 PO = 1.036E+05 N/M2 DE = 1.346E-02 KG/M3 DPW = 1.338E-02 KG/M3 DSTRP = 2.696E+00 CM  
 TO = 3.574E+02 DEG.K TE = 6.400E+01 DEG.K TPW = 6.385E+01 DEG.K THP = 3.235E-01 CM  
 PSW = 2.441E+02 N/M2 UE = 7.678E+02 M/S UPW = 7.681E+02 M/S TMEP = 5.873E-01 CM  
 TW = 3.024E+02 DEG.K RE = 2.413E+06 1/M RPW = 2.406E+06 1/M TMHP = 1.750E-01 CM

N	Y(CM)	M	PS/PSW	T/TTE	D/DE	T/TE	U/UE	DP/DPE	TP/TPE	UP/UPE
1	0.0000	0.0000	1.0000	.8460	.2099	4.7247	0.0000	.9941	.9977	1.0003
2	.0063	.0399	1.0000	.8471	.2097	4.7296	.0181	.9941	.9977	1.0003
3	.0099	.0697	1.0000	.8467	.2099	4.7240	.0316	.9941	.9977	1.0003
4	.0239	.1377	1.0000	.8491	.2100	4.7240	.0625	.9941	.9977	1.0003
5	.0394	.2073	1.0000	.8525	.2101	4.7202	.0941	.9941	.9977	1.0003
6	.0587	.3665	1.0000	.8633	.2112	4.6953	.1658	.9941	.9977	1.0003
7	.0935	.6512	1.0000	.8749	.2202	4.5043	.2886	.9941	.9977	1.0003
8	.1336	.9107	1.0000	.8864	.2336	4.2461	.3919	.9941	.9977	1.0003
9	.1720	1.0844	1.0000	.8942	.2453	4.0432	.4554	.9941	.9977	1.0003
10	.2245	1.2963	1.0000	.9014	.2632	3.7680	.5256	.9941	.9977	1.0003
11	.3355	1.5139	1.0000	.9031	.2868	3.4585	.5880	.9941	.9977	1.0003
12	.4440	1.6085	1.0000	.9051	.2977	3.3311	.6131	.9941	.9977	1.0003
13	.5718	1.7383	1.0000	.9088	.3135	3.1635	.6457	.9941	.9977	1.0003
14	.6876	1.8341	1.0000	.9076	.3273	3.0302	.6668	.9941	.9977	1.0003
15	.7894	1.8970	1.0000	.9069	.3367	2.9453	.6800	.9941	.9977	1.0003
16	.9304	1.9797	1.0000	.9070	.3493	2.8396	.6968	.9941	.9977	1.0003
17	1.0671	2.0660	1.0000	.9081	.3625	2.7360	.7137	.9941	.9977	1.0003
18	1.2174	2.1584	1.0000	.9095	.3772	2.6295	.7310	.9941	.9977	1.0003
19	1.4973	2.3496	1.0000	.9137	.4090	2.4253	.7642	.9941	.9977	1.0003
20	1.8588	2.5732	1.0000	.9192	.4490	2.2088	.7987	.9941	.9977	1.0003
21	2.0965	2.7298	1.0000	.9237	.4788	2.0715	.8206	.9941	.9977	1.0003
22	2.3820	2.9396	1.0000	.9289	.5216	1.9014	.8466	.9941	.9977	1.0003
23	2.6479	3.1276	1.0002	.9337	.5624	1.7638	.8675	.9943	.9977	1.0002
24	2.9322	3.3272	1.0006	.9384	.6086	1.6306	.8874	.9946	.9978	1.0002
25	3.1882	3.5162	1.0010	.9431	.6546	1.5167	.9044	.9948	.9979	1.0002
26	3.5199	3.7246	1.0014	.9485	.7078	1.4034	.9215	.9952	.9981	1.0002
27	3.8511	3.9295	1.0019	.9541	.7624	1.3034	.9370	.9955	.9982	1.0002
28	4.2088	4.1371	1.0025	.9590	.8211	1.2109	.9508	.9959	.9984	1.0002
29	4.4628	4.2543	1.0028	.9623	.8550	1.1633	.9584	.9962	.9985	1.0002
30	4.8578	4.4001	1.0034	.9677	.8972	1.1092	.9679	.9966	.9986	1.0001
31	5.1791	4.4883	1.0039	.9715	.9229	1.0789	.9737	.9969	.9988	1.0001
32	5.5230	4.5518	1.0044	.9760	.9401	1.0597	.9786	.9973	.9989	1.0001
33	6.0005	4.6280	1.0051	.9821	.9603	1.0381	.9848	.9978	.9991	1.0001
34	6.3818	4.6794	1.0057	.9875	.9729	1.0252	.9896	.9982	.9993	1.0001
35	6.7958	4.7126	1.0063	.9917	.9806	1.0178	.9930	.9986	.9994	1.0001
36	7.1344	4.7109	1.0068	.9950	.9773	1.0218	.9946	.9989	.9996	1.0000
* 37	7.4541	4.7392	1.0072	.9969	.9855	1.0137	.9966	.9993	.9997	1.0000
38	7.8306	4.7682	1.0078	.9989	.9939	1.0057	.9987	.9997	.9999	1.0000
** 39	8.1504	4.7879	1.0083	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
40	8.5171	4.8079	1.0088	1.0016	1.0058	.9948	1.0015	1.0004	1.0002	1.0000
41	8.9969	4.8040	1.0134	1.0023	1.0084	.9968	1.0017	1.0036	1.0015	.9998

TABLE 5 NOL BOUNDARY LAYER CHANNEL PROFILE DATA  
RUN NO 812171

STA = 2.057E+00 M      ME = 4.820E+00      MPW = 4.871E+00      DELP = 6.333E+00 CM  
 PO = 1.037E+06 N/M2      DE = 1.337E-01 KG/M3      DPW = 1.278E-01 KG/M3      DSTRP = 1.962E+00 CM  
 TO = 3.588E+02 DEG.K      TE = 6.354E+01 DEG.K      TPW = 6.241E+01 DEG.K      THP = 2.251E-01 CM  
 PSW = 2.281E+03 N/M2      UE = 7.702E+02 M/S      UPW = 7.717E+02 M/S      THEP = 4.110E-01 CM  
 TW = 3.021E+02 DEG.K      RE = 2.424E+07 1/M      RPW = 2.370E+07 1/M      THMP = 1.077E-01 CM

N	Y (CM)	M	PS/PSW	T/TTE	D/DE	T/TE	U/UE	DP/DPE	TP/TPE	UP/UPE
1	0.0000	0.0000	1.0000	.8419	.1975	4.7540	0.0000	.9561	.9822	1.0019
2	.0063	.2102	1.0000	.8412	.1995	4.7081	.0946	.9561	.9822	1.0019
3	.0122	.4096	1.0000	.8434	.2038	4.6075	.1824	.9561	.9822	1.0019
4	.0358	.9158	1.0000	.8600	.2258	4.1585	.3875	.9561	.9822	1.0019
5	.0714	1.2912	1.0000	.8798	.2521	3.7258	.5171	.9561	.9822	1.0019
6	.1011	1.4291	1.0000	.8839	.2650	3.5435	.5581	.9561	.9822	1.0019
7	.1699	1.5793	1.0000	.8824	.2825	3.3244	.5974	.9561	.9822	1.0019
8	.2233	1.6628	1.0000	.8827	.2926	3.2096	.6180	.9561	.9822	1.0019
9	.3559	1.8122	1.0000	.8845	.3116	3.0143	.6528	.9561	.9822	1.0019
10	.4826	1.9440	1.0000	.8890	.3285	2.8591	.6819	.9561	.9822	1.0019
11	.6424	2.0897	1.0000	.8976	.3471	2.7053	.7131	.9561	.9822	1.0019
12	.8443	2.2744	1.0000	.9090	.3723	2.5226	.7495	.9561	.9822	1.0019
13	1.0168	2.4222	1.0000	.9164	.3945	2.3808	.7754	.9561	.9822	1.0019
14	1.1379	2.5384	1.0000	.9219	.4129	2.2745	.7943	.9561	.9822	1.0019
15	1.4153	2.8004	1.0000	.9345	.4572	2.0543	.8327	.9561	.9822	1.0019
16	1.9883	3.3525	1.0000	.9528	.5670	1.6565	.8952	.9561	.9822	1.0019
17	2.8763	4.0823	1.0028	.9707	.7445	1.2650	.9526	.9580	.9830	1.0018
18	3.7071	4.4803	1.0065	.9820	.8548	1.1058	.9774	.9606	.9840	1.0017
19	4.5377	4.6797	1.0147	.9890	.9181	1.0380	.9891	.9661	.9863	1.0015
20	5.4259	4.7882	1.0251	.9940	.9580	1.0049	.9958	.9732	.9892	1.0012
* 21	6.3330	4.8409	1.0385	.9973	.9849	.9903	.9994	.9823	.9920	1.0008
** 22	7.1765	4.8200	1.0648	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
23	7.9944	4.8319	1.0499	1.0013	.9887	.9973	1.0011	.9900	.9960	1.0004
24	8.8920	4.8409	1.0385	1.0014	.9809	.9943	1.0014	.9823	.9929	1.0008

TABLE 5 NOL BOUNDARY LAYER CHANNEL PROFILE DATA  
RUN NO 812172

STA = 2.057E+00 M	ME = 4.809E+00	MPW = 4.834E+00	DELP = 5.768E+00 CM
PO = 5.137E+05 N/M2	DE = 6.762E-02 KG/M3	DPW = 6.615E-02 KG/M3	DSTRP = 2.181E+00 CM
TO = 3.545E+02 DEG.K	TE = 6.302E+01 DEG.K	TPW = 6.247E+01 DEG.K	THP = 2.485E-01 CM
PSW = 1.181E+03 N/M2	UE = 7.653E+02 M/S	UPW = 7.661E+02 M/S	THEP = 4.503E-01 CM
TW = 2.968E+02 DEG.K	RE = 1.230E+07 1/M	RPW = 1.216E+07 1/M	THHP = 1.168E-01 CM

N	Y (CM)	M	PS/PSW	IT/TTE	D/DE	T/TE	U/UE	DP/DPE	TP/TPE	UP/UPE
1	0.0000	0.0000	1.0000	.8370	.2059	4.7088	0.0000	.9782	.9912	1.0010
2	.0063	.1367	1.0000	.8378	.2065	4.6954	.0616	.9782	.9912	1.0010
3	.0122	.2224	1.0000	.8383	.2076	4.6697	.0999	.9782	.9912	1.0010
4	.0201	.3136	1.0000	.8400	.2092	4.6343	.1404	.9782	.9912	1.0010
5	.0320	.5091	1.0000	.8454	.2144	4.5216	.2251	.9782	.9912	1.0010
6	.0439	.6950	1.0000	.8521	.2218	4.3715	.3022	.9782	.9912	1.0010
7	.0792	1.1343	1.0000	.8726	.2483	3.9042	.4660	.9782	.9912	1.0010
8	.0577	.9118	1.0000	.8617	.2333	4.1563	.3866	.9782	.9912	1.0010
9	.1128	1.3206	1.0000	.8814	.2637	3.6762	.5265	.9782	.9912	1.0010
10	.1760	1.4560	1.0000	.8809	.2786	3.4801	.5648	.9782	.9912	1.0010
11	.2291	1.5304	1.0000	.8806	.2874	3.3736	.5845	.9782	.9912	1.0010
12	.3101	1.6160	1.0000	.8816	.2976	3.2578	.6065	.9782	.9912	1.0010
13	.4006	1.7059	1.0000	.8846	.3082	3.1457	.6291	.9782	.9912	1.0010
14	.5105	1.8051	1.0000	.8885	.3204	3.0263	.6530	.9782	.9912	1.0010
15	.6281	1.9013	1.0000	.8928	.3326	2.9151	.6750	.9782	.9912	1.0010
16	.7437	1.9972	1.0000	.8965	.3456	2.8054	.6956	.9782	.9912	1.0010
17	.8578	2.0926	1.0000	.9006	.3590	2.7009	.7151	.9782	.9912	1.0010
18	.9774	2.1801	1.0000	.9042	.3718	2.6078	.7321	.9782	.9912	1.0010
19	1.1041	2.2793	1.0003	.9093	.3866	2.5086	.7507	.9784	.9913	1.0009
20	1.2535	2.4024	1.0009	.9154	.4060	2.3903	.7723	.9788	.9915	1.0009
21	1.4041	2.5385	1.0015	.9238	.4276	2.2707	.7954	.9792	.9916	1.0009
22	1.5761	2.6940	1.0022	.9298	.4554	2.1336	.8182	.9797	.9918	1.0009
23	1.8626	2.9455	1.0033	.9393	.5035	1.9320	.8513	.9805	.9921	1.0008
24	2.1011	3.1504	1.0045	.9461	.5462	1.7831	.8748	.9813	.9925	1.0008
25	2.3208	3.3627	1.0060	.9523	.5938	1.6425	.8961	.9823	.9929	1.0008
26	2.5690	3.5598	1.0077	.9572	.6413	1.5236	.9137	.9835	.9934	1.0007
27	2.7600	3.7354	1.0090	.9615	.6856	1.4269	.9278	.9845	.9938	1.0007
28	2.9987	3.9077	1.0107	.9652	.7316	1.3363	.9404	.9856	.9942	1.0006
29	3.2565	4.0595	1.0124	.9682	.7742	1.2679	.9505	.9868	.9947	1.0006
30	3.4666	4.1705	1.0139	.9711	.8059	1.2198	.9578	.9878	.9951	1.0005
31	3.7722	4.3079	1.0160	.9758	.8455	1.1651	.9669	.9893	.9957	1.0005
32	4.0109	4.3981	1.0176	.9783	.8728	1.1305	.9723	.9904	.9962	1.0004
33	4.2019	4.4562	1.0190	.9805	.8905	1.1095	.9760	.9914	.9965	1.0004
34	4.4310	4.5291	1.0205	.9835	.9125	1.0843	.9807	.9925	.9970	1.0003
35	4.6698	4.6022	1.0222	.9862	.9353	1.0596	.9851	.9936	.9974	1.0003
36	4.9182	4.6691	1.0239	.9888	.9566	1.0378	.9890	.9948	.9979	1.0002
37	5.2428	4.7289	1.0260	.9916	.9760	1.0193	.9928	.9963	.9985	1.0002
38	5.5293	4.7586	1.0279	.9933	.9861	1.0107	.9948	.9976	.9990	1.0001
39	5.7678	4.7936	1.0294	.9954	.9973	1.0007	.9971	.9986	.9994	1.0001
40	6.0830	4.8092	1.0314	.9982	1.0018	.9982	.9991	1.0000	1.0000	1.0000
41	6.3693	4.8092	1.0314	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
42	6.6916	4.8117	1.0282	1.0017	.9961	1.0008	1.0009	.9978	.9991	1.0001
43	6.9571	4.8145	1.0249	1.0023	.9932	1.0005	1.0013	.9955	.9982	1.0002
44	7.2507	4.8170	1.0217	1.0031	.9902	1.0004	1.0018	.9933	.9973	1.0003
45	7.5352	4.8208	1.0170	1.0040	.9860	1.0000	1.0024	.9900	.9960	1.0004
46	7.7828	4.8237	1.0137	1.0047	.9831	.9997	1.0029	.9877	.9951	1.0005
47	8.1265	4.8224	1.0152	1.0059	.9829	1.0014	1.0034	.9888	.9955	1.0005
48	8.4607	4.8250	1.0120	1.0052	.9814	.9998	1.0032	.9865	.9946	1.0006
49	8.9573	4.8396	.9945	1.0053	.9692	.9949	1.0038	.9743	.9897	1.0011

TABLE 5 NOL BOUNDARY LAYER CHANNEL PROFILE DATA  
RUN NO 901291

STA = 2.057E+00 M	ME = 4.791E+00	MPW = 4.778E+00	DELP = 6.774E+00 CM
PO = 1.036E+05 N/M2	DE = 1.352E-02 KG/M3	DPW = 1.383E-02 KG/M3	DSTRP = 2.857E+00 CM
TO = 3.571E+02 DEG.K	TE = 6.387E+01 DEG.K	TPW = 6.445E+01 DEG.K	TMP = 3.383E-01 CM
PSW = 2.546E+02 N/M2	UE = 7.675E+02 M/S	UPW = 7.668E+02 M/S	THEP = 6.088E-01 CM
TW = 2.980E+02 DEG.K	RE = 2.429E+06 1/M	RPW = 2.457E+06 1/M	THMP = 1.758E-01 CM

N	Y (CM)	M	PS/PSW	TT/TTE	D/DE	T/TE	U/UE	DP/DPE	TP/TPE	UP/UPE
1	0.0000	0.0000	1.0000	.8345	.2212	4.6656	0.0000	1.0226	1.0090	.9990
2	.0063	.0544	1.0000	.8358	.2210	4.6699	.0245	1.0226	1.0090	.9990
3	.0150	.1127	1.0000	.8360	.2213	4.6623	.0508	1.0226	1.0090	.9990
4	.0287	.1681	1.0000	.8378	.2215	4.6578	.0757	1.0226	1.0090	.9990
5	.0493	.2877	1.0000	.8443	.2222	4.6436	.1294	1.0226	1.0090	.9990
6	.0716	.4495	1.0000	.8492	.2261	4.5635	.2004	1.0226	1.0090	.9990
7	.0886	.5981	1.0000	.8550	.2313	4.4611	.2637	1.0226	1.0090	.9990
8	.1626	.9892	1.0000	.8809	.2505	4.1190	.4190	1.0226	1.0090	.9990
9	.2141	1.2305	1.0000	.8930	.2693	3.8321	.5028	1.0226	1.0090	.9990
10	.2791	1.3785	1.0000	.8937	.2850	3.6207	.5475	1.0226	1.0090	.9990
11	.3284	1.4405	1.0000	.8954	.2916	3.5380	.5655	1.0226	1.0090	.9990
12	.3907	1.5140	1.0000	.8983	.2936	3.4435	.5864	1.0226	1.0090	.9990
13	.4514	1.5784	1.0000	.8992	.3075	3.3554	.6035	1.0226	1.0090	.9990
14	.4976	1.6065	1.0000	.9013	.3105	3.3234	.6113	1.0226	1.0090	.9990
15	.6157	1.7054	1.0000	.8981	.3250	3.1746	.6342	1.0226	1.0090	.9990
16	.7209	1.7638	1.0000	.8967	.3339	3.0903	.6472	1.0226	1.0090	.9990
17	.8595	1.8362	1.0000	.8954	.3451	2.9897	.6627	1.0226	1.0090	.9990
18	.9787	1.9101	1.0000	.8956	.3564	2.8949	.6783	1.0226	1.0090	.9990
19	1.0935	1.9819	1.0000	.8951	.3682	2.8025	.6925	1.0226	1.0090	.9990
20	1.3188	2.1043	1.0000	.8987	.3872	2.6648	.7170	1.0226	1.0090	.9990
21	1.5367	2.2272	1.0000	.9035	.4069	2.5358	.7403	1.0226	1.0090	.9990
22	1.7925	2.3825	.9992	.9096	.4329	2.3815	.7674	1.0220	1.0087	.9991
23	2.0104	2.5164	.9985	.9141	.4569	2.2550	.7887	1.0215	1.0085	.9991
24	2.2380	2.6335	.9978	.9185	.4785	2.1513	.8062	1.0210	1.0083	.9991
25	2.4844	2.8252	.9970	.9231	.5176	1.9876	.8314	1.0204	1.0081	.9991
26	2.6929	2.9532	.9963	.9269	.5444	1.8883	.8470	1.0199	1.0079	.9991
27	2.9299	3.1196	.9956	.9304	.5819	1.7655	.8652	1.0194	1.0077	.9992
28	3.1669	3.2601	.9948	.9350	.6137	1.6725	.8800	1.0188	1.0075	.9992
29	3.4039	3.4266	.9941	.9391	.6541	1.5681	.8956	1.0183	1.0073	.9992
30	3.6406	3.6128	.9933	.9434	.7016	1.4608	.9114	1.0178	1.0071	.9992
31	3.8578	3.7272	.9926	.9480	.7302	1.4028	.9214	1.0173	1.0069	.9993
32	4.1006	3.8919	.9918	.9523	.7745	1.3213	.9338	1.0166	1.0066	.9993
33	4.3246	4.0380	.9902	.9561	.8145	1.2545	.9440	1.0155	1.0062	.9993
34	4.5301	4.1232	.9888	.9592	.8372	1.2187	.9501	1.0145	1.0058	.9994
35	4.7635	4.2638	.9873	.9625	.8777	1.1607	.9588	1.0133	1.0053	.9994
36	4.9690	4.3534	.9859	.9660	.9023	1.1274	.9648	1.0123	1.0049	.9995
37	5.2151	4.4246	.9842	.9701	.9203	1.1035	.9701	1.0111	1.0044	.9995
38	5.4729	4.4980	.9824	.9750	.9384	1.0802	.9758	1.0098	1.0039	.9996
39	5.6639	4.5042	.9812	.9780	.9364	1.0812	.9775	1.0088	1.0035	.9996
40	5.9312	4.5868	.9793	.9818	.9587	1.0540	.9829	1.0075	1.0030	.9997
41	6.2177	4.6194	.9774	.9853	.9645	1.0457	.9859	1.0061	1.0024	.9997
42	6.5016	4.6923	.9755	.9893	.9834	1.0235	.9908	1.0046	1.0019	.9998
43	6.5674	4.7125	.9750	.9896	.9895	1.0168	.9918	1.0043	1.0017	.9998
44	6.7744	4.7466	.9736	.9938	.9955	1.0091	.9952	1.0033	1.0013	.9999
45	7.0190	4.7644	.9720	.9968	.9969	1.0060	.9974	1.0021	1.0008	.9999
46	7.2448	4.7830	.9704	.9987	.9998	1.0015	.9991	1.0009	1.0004	1.0000
47	7.4331	4.7910	.9692	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
48	7.6401	4.8044	.9678	1.0010	1.0021	.9965	1.0010	.9990	.9996	1.0000
49	7.7716	4.8066	.9669	1.0015	1.0015	.9961	1.0013	.9983	.9993	1.0001
50	7.9317	4.8083	.9658	1.0027	.9997	.9968	1.0020	.9975	.9990	1.0001
51	8.0256	4.8083	.9658	1.0033	.9992	.9974	1.0023	.9975	.9990	1.0001
52	8.2139	4.8089	.9651	1.0037	.9982	.9976	1.0025	.9970	.9988	1.0001
53	8.4303	4.8089	.9651	1.0044	.9976	.9983	1.0028	.9970	.9988	1.0001
54	8.5054	4.8114	.9622	1.0044	.9953	.9975	1.0030	.9949	.9979	1.0002
55	8.8816	4.8145	.9586	1.0050	.9921	.9970	1.0034	.9922	.9969	1.0003

TABLE 5 NOL BOUNDARY LAYER CHANNEL PROFILE DATA  
RUN NO 812174

STA = 2.210E+00 M	ME = 4.802E+00	MPW = 4.830E+00	DELP = 5.567E+00 CM
PO = 1.037E+06 N/M2	DE = 1.349E-01 KG/M3	DPW = 1.349E-01 KG/M3	DSTRP = 2.022E+00 CM
TO = 3.494E+02 DEG.K	TE = 6.227E+01 DEG.K	TPW = 6.227E+01 DEG.K	THP = 2.326E-01 CM
PSW = 2.395E+03 N/M2	UE = 7.595E+02 M/S	UPW = 7.595E+02 M/S	THEP = 4.220E-01 CM
TW = 2.918E+02 DEG.K	RE = 2.468E+07 1/M	RPW = 2.468E+07 1/M	THWP = 1.072E-01 CM

N	Y(CM)	M	PS/PSW	TT/TE	D/DE	T/TE	U/UE	DP/DPE	TP/TPE	UP/UPE
1	0.0000	0.0000	1.0000	.8351	.2134	4.6858	0.0000	1.0000	1.0000	1.0000
2	.0063	.2038	1.0000	.8349	.2152	4.6460	.0915	1.0000	1.0000	1.0000
3	.0104	.2806	1.0000	.8358	.2166	4.6172	.1256	1.0000	1.0000	1.0000
4	.0201	.4788	1.0000	.8402	.2218	4.5080	.2117	1.0000	1.0000	1.0000
5	.0419	.9393	1.0000	.8579	.2444	4.0917	.3957	1.0000	1.0000	1.0000
6	.0813	1.2936	1.0000	.8752	.2718	3.6793	.5168	1.0000	1.0000	1.0000
7	.1128	1.4162	1.0000	.8800	.2838	3.5239	.5537	1.0000	1.0000	1.0000
8	.1699	1.5194	1.0000	.8783	.2966	3.3715	.5811	1.0000	1.0000	1.0000
9	.3139	1.6972	1.0000	.8850	.3174	3.1507	.6274	1.0000	1.0000	1.0000
10	.4666	1.8502	1.0000	.8921	.3366	2.9711	.6642	1.0000	1.0000	1.0000
11	.6373	1.9896	1.0000	.8994	.3550	2.8167	.6954	1.0000	1.0000	1.0000
12	.8316	2.1509	1.0000	.9076	.3781	2.6451	.7286	1.0000	1.0000	1.0000
13	1.0437	2.3282	1.0000	.9169	.4051	2.4686	.7618	1.0000	1.0000	1.0000
14	1.3277	2.5421	1.0000	.9277	.4404	2.2706	.7978	1.0000	1.0000	1.0000
15	1.9771	3.1464	1.0000	.9505	.5588	1.7896	.8766	1.0000	1.0000	1.0000
16	2.8745	3.9457	1.0000	.9685	.7570	1.3210	.9445	1.0000	1.0000	1.0000
17	3.7818	4.4267	1.0000	.9789	.8956	1.1166	.9742	1.0000	1.0000	1.0000
18	4.6030	4.6496	1.0000	.9892	.9591	1.0426	.9888	1.0000	1.0000	1.0000
19	5.5674	4.7800	1.0000	.9923	1.0003	.9997	.9953	1.0000	1.0000	1.0000
20	6.4640	4.7954	1.0000	.9952	1.0027	.9973	.9974	1.0000	1.0000	1.0000
21	7.2507	4.8016	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
22	9.1483	4.8323	1.0000	.9995	1.0110	.9891	1.0009	1.0000	1.0000	1.0000

TABLE 5 NOL BOUNDARY LAYER CHANNEL PROFILE DATA  
RUN NO 812175

STA = 2.210E+00 M ME = 4.823E+00 MPW = 4.828E+00 DELP = 5.806E+00 CM  
 PO = 5.144E+05 N/M2 DE = 6.606E-02 KG/M3 DPW = 6.669E-02 KG/M3 DSTRP = 2.236E+00 CM  
 TO = 3.525E+02 DEG.K TE = 6.237E+01 DEG.K TPW = 6.260E+01 DEG.K THP = 2.521E-01 CM  
 PSW = 1.192E+03 N/M2 UE = 7.635E+02 M/S UPW = 7.632E+02 M/S THEP = 4.553E-01 CM  
 TW = 2.990E+02 DEG.K RE = 1.213E+07 1/M RPW = 1.219E+07 1/M THMP = 1.128E-01 CM

N	Y(CM)	M	PS/PSW	IT/TTE	D/DE	T/TE	U/UE	DP/DPE	TP/TPE	UP/UPE
1	0.0000	0.0000	1.0000	.8483	.2113	4.7950	0.0000	1.0094	1.0037	.9996
2	.0063	.1886	1.0000	.8495	.2125	4.7681	.0854	1.0094	1.0037	.9996
3	.0201	.4518	1.0000	.8546	.2183	4.6412	.2018	1.0094	1.0037	.9996
4	.0340	.6696	1.0000	.8617	.2267	4.4698	.2935	1.0094	1.0037	.9996
5	.0439	.8408	1.0000	.8687	.2355	4.3023	.3616	1.0094	1.0037	.9996
6	.0693	1.0997	1.0000	.8809	.2527	4.0093	.4566	1.0094	1.0037	.9996
7	.1029	1.2977	1.0000	.8891	.2695	3.7596	.5217	1.0094	1.0037	.9996
8	.1603	1.4266	1.0000	.8877	.2841	3.5660	.5586	1.0094	1.0037	.9996
9	.2154	1.4999	1.0000	.8867	.2931	3.4567	.5782	1.0094	1.0037	.9996
10	.3355	1.6211	1.0000	.8886	.3077	3.2925	.6099	1.0094	1.0037	.9996
11	.4458	1.7218	1.0000	.8916	.3202	3.1641	.6350	1.0094	1.0037	.9996
12	.5578	1.8151	1.0000	.8951	.3322	3.0501	.6572	1.0094	1.0037	.9996
13	.6797	1.9120	1.0000	.8990	.3452	2.9354	.6792	1.0094	1.0037	.9996
14	.7861	2.0037	1.0000	.9028	.3580	2.8305	.6989	1.0094	1.0037	.9996
15	.9075	2.0839	1.0000	.9062	.3696	2.7414	.7154	1.0094	1.0037	.9996
16	1.0282	2.1781	1.0000	.9105	.3836	2.6410	.7339	1.0094	1.0037	.9996
17	1.1377	2.2595	1.0000	.9138	.3964	2.5556	.7489	1.0094	1.0037	.9996
18	1.3655	2.4165	1.0000	.9206	.4221	2.4003	.7762	1.0094	1.0037	.9996
19	1.6998	2.6850	1.0000	.9305	.4704	2.1539	.8170	1.0094	1.0037	.9996
20	1.9576	2.8910	1.0000	.9384	.5103	1.9855	.8446	1.0094	1.0037	.9996
21	2.2154	3.1218	1.0000	.9460	.5588	1.8132	.8716	1.0094	1.0037	.9996
22	2.5400	3.4014	1.0000	.9538	.6228	1.6269	.8995	1.0094	1.0037	.9996
23	2.8456	3.6760	1.0000	.9606	.6909	1.4665	.9230	1.0094	1.0037	.9996
24	3.1130	3.8871	1.0000	.9650	.7470	1.3562	.9386	1.0094	1.0037	.9996
25	3.4282	4.1014	1.0000	.9709	.8057	1.2575	.9536	1.0094	1.0037	.9996
26	3.7816	4.3095	.9992	.9752	.8658	1.1693	.9662	1.0088	1.0035	.9996
27	4.0965	4.4425	.9981	.9797	.9033	1.1195	.9745	1.0080	1.0032	.9997
28	4.4498	4.5593	.9969	.9845	.9360	1.0790	.9819	1.0071	1.0028	.9997
29	4.8222	4.6436	.9956	.9887	.9589	1.0520	.9875	1.0062	1.0025	.9997
30	5.1852	4.7107	.9943	.9921	.9769	1.0312	.9918	1.0053	1.0021	.9998
31	5.3952	4.7442	.9936	.9940	.9857	1.0213	.9940	1.0047	1.0019	.9998
32	5.8059	4.7844	.9921	.9971	.9948	1.0104	.9971	1.0037	1.0015	.9998
33	6.1877	4.8021	.9892	.9987	.9963	1.0059	.9986	1.0016	1.0006	.9999
34	6.4544	4.8232	.9870	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
35	6.8049	4.8355	.9841	1.0018	.9995	.9976	1.0014	.9979	.9992	1.0001
36	7.1463	4.8448	.9814	1.0024	.9992	.9951	1.0020	.9959	.9984	1.0002
37	7.5443	4.8502	.9750	1.0034	.9936	.9942	1.0027	.9913	.9965	1.0004
38	7.9065	4.8541	.9705	1.0040	.9897	.9935	1.0031	.9880	.9952	1.0005
39	8.1836	4.8541	.9705	1.0043	.9894	.9938	1.0033	.9880	.9952	1.0005
40	8.6228	4.8588	.9651	1.0056	.9843	.9934	1.0041	.9841	.9936	1.0007
41	9.0429	4.8568	.9674	1.0059	.9856	.9944	1.0042	.9857	.9943	1.0006

TABLE 5 NOL BOUNDARY LAYER CHANNEL PROFILE DATA  
RUN NO 812176

STA	=	2.210E+00	M	ME	=	4.804E+00	MPW	=	4.785E+00	DELP	=	7.305E+00	CM		
PO	=	1.034E+05	N/M2	DE	=	1.374E-02	KG/M3	DPW	=	1.396E-02	KG/M3	DSTRP	=	3.018E+00	CM
TO	=	3.532E+02	DEG.K	TE	=	6.289E+01	DEG.K	TPW	=	6.328E+01	DEG.K	THP	=	3.615E-01	CM
PSW	=	2.521E+02	N/M2	UE	=	7.637E+02	M/S	UPW	=	7.632E+02	M/S	THEP	=	6.505E-01	CM
TW	=	2.970E+02	DEG.K	RE	=	2.500E+06	1/M	RPW	=	2.519E+06	1/M	THHP	=	1.941E-01	CM
N	Y (CM)	M	PS/PSW	IT/TTE	D/DE	T/TE	U/UE	DP/DPE	TP/TPE	UP/UPE					
1	0.0000	0.0000	1.0000	.8408	.2164	4.7222	0.0000	1.0156	1.0062	.9993					
2	.0063	.0468	1.0000	.8410	.2165	4.7209	.0212	1.0156	1.0062	.9993					
3	.0201	.1155	1.0000	.8427	.2165	4.7201	.0522	1.0156	1.0062	.9993					
4	.0279	.1567	1.0000	.8463	.2161	4.7296	.0709	1.0156	1.0062	.9993					
5	.0439	.2822	1.0000	.8486	.2178	4.6911	.1272	1.0156	1.0062	.9993					
6	.0655	.4646	1.0000	.8529	.2226	4.5916	.2072	1.0156	1.0062	.9993					
7	.1011	.7736	1.0000	.8606	.2368	4.3163	.3346	1.0156	1.0062	.9993					
8	.1603	1.0584	1.0000	.8770	.2540	4.0236	.4419	1.0156	1.0062	.9993					
9	.2154	1.2641	1.0000	.8868	.2708	3.7741	.5112	1.0156	1.0062	.9993					
10	.3299	1.4798	1.0000	.8895	.2942	3.4738	.5741	1.0156	1.0062	.9993					
11	.4437	1.5883	1.0000	.8890	.3080	3.3182	.6023	1.0156	1.0062	.9993					
12	.5593	1.6717	1.0000	.8877	.3196	3.1979	.6223	1.0156	1.0062	.9993					
13	.6777	1.7399	1.0000	.8872	.3293	3.1035	.6380	1.0156	1.0062	.9993					
14	.7823	1.7889	1.0000	.8887	.3358	3.0431	.6496	1.0156	1.0062	.9993					
15	.8999	1.8498	1.0000	.8908	.3441	2.9702	.6636	1.0156	1.0062	.9993					
16	1.0279	1.9312	1.0000	.8926	.3559	2.8712	.6811	1.0156	1.0062	.9993					
17	1.1661	2.0141	1.0000	.8926	.3693	2.7675	.6974	1.0156	1.0062	.9993					
18	1.4209	2.1267	1.0000	.8952	.3871	2.6396	.7192	1.0156	1.0062	.9993					
19	1.6977	2.2617	1.0000	.8997	.4092	2.4976	.7440	1.0156	1.0062	.9993					
20	1.9555	2.3999	1.0000	.9051	.4326	2.3621	.7678	1.0156	1.0062	.9993					
21	2.2421	2.5569	1.0000	.9119	.4605	2.2193	.7929	1.0156	1.0062	.9993					
22	2.6241	2.8206	1.0000	.9203	.5123	1.9946	.8292	1.0156	1.0062	.9993					
23	2.9870	3.0389	1.0000	.9271	.5588	1.8288	.8554	1.0156	1.0062	.9993					
24	3.3785	3.2862	1.0000	.9343	.6154	1.6606	.8815	1.0156	1.0062	.9993					
25	3.7031	3.5005	.9996	.9404	.6675	1.5305	.9014	1.0153	1.0061	.9993					
26	4.0947	3.7694	.9987	.9477	.7366	1.3854	.9235	1.0146	1.0058	.9994					
27	4.4671	4.0131	.9978	.9535	.8037	1.2686	.9409	1.0140	1.0056	.9994					
28	4.8585	4.2179	.9968	.9592	.8619	1.1819	.9545	1.0133	1.0053	.9994					
29	5.2309	4.3584	.9959	.9646	.9016	1.1288	.9638	1.0126	1.0050	.9995					
30	5.5842	4.4523	.9950	.9699	.9268	1.0972	.9708	1.0120	1.0048	.9995					
31	6.0236	4.5472	.9927	.9772	.9493	1.0686	.9785	1.0103	1.0041	.9996					
32	6.4808	4.6373	.9903	.9842	.9706	1.0427	.9856	1.0085	1.0034	.9996					
33	6.9073	4.6984	.9880	.9900	.9834	1.0268	.9910	1.0069	1.0028	.9997					
34	7.3053	4.7614	.9859	.9942	.9987	1.0089	.9955	1.0054	1.0021	.9998					
35	7.6850	4.7996	.9839	.9971	1.0068	.9987	.9984	1.0039	1.0016	.9998					
36	8.1432	4.8041	.9786	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000					
37	8.6111	4.8068	.9777	1.0020	.9981	1.0011	1.0011	.9994	.9998	1.0000					
38	8.6111	4.8055	.9777	1.0017	.9979	1.0013	1.0009	.9994	.9998	1.0000					
39	8.6111	4.8048	.9777	1.0014	.9980	1.0012	1.0007	.9994	.9998	1.0000					
40	9.1077	4.8183	.9621	1.0050	.9830	1.0002	1.0030	.9880	.9952	1.0005					



TABLE 5 NOL BOUNDARY LAYER CHANNEL PROFILE DATA  
RUN NO 1061

STA = 1.448E+00 M ME = 4.868E+00 MPW = 4.935E+00 DELP = 5.333E+00 CM  
 PO = 5.207E+05 N/M2 DE = 6.635E+02 KG/M3 DPW = 6.267E+02 KG/M3 DSTRP = 1.735E+00 CM  
 TO = 3.484E+02 DEG.K TE = 6.069E+01 DEG.K TPW = 5.932E+01 DEG.K THP = 1.994E-01 CM  
 PSW = 1.062E+03 N/M2 UE = 7.603E+02 M/S UPW = 7.621E+02 M/S THEP = 3.682E-01 CM  
 TW = 2.955E+02 DEG.K RE = 1.251E+07 1/M RPW = 1.216E+07 1/M THMP = 1.003E-01 CM

N	Y(CM)	M	PS/PSW	TT/TTE	D/DE	T/TE	U/UE	DP/DPE	TP/TPE	UP/UPE
1	0.0000	0.0000	1.0000	.6-.81	.1896	4.8683	0.0000	.9445	.9774	1.0024
2	.0063	.1420	1.0000	.8505	.1898	4.8626	.0643	.9445	.9774	1.0024
3	.0089	.1935	1.0000	.8517	.1902	4.8524	.0876	.9445	.9774	1.0024
4	.0140	.2845	1.0000	.8513	.1920	4.8089	.1281	.9445	.9774	1.0024
5	.0165	.3143	1.0000	.8513	.1926	4.7919	.1413	.9445	.9774	1.0024
6	.0216	.4178	1.0000	.8544	.1948	4.7392	.1868	.9445	.9774	1.0024
7	.0241	.4819	1.0000	.8585	.1960	4.7089	.2148	.9445	.9774	1.0024
8	.0317	.6079	1.0000	.8624	.2003	4.6095	.2681	.9445	.9774	1.0024
9	.0368	.7714	1.0000	.8721	.2063	4.4738	.3351	.9445	.9774	1.0024
10	.0419	.8345	1.0000	.8754	.2093	4.4109	.3600	.9445	.9774	1.0024
11	.0521	.9831	1.0000	.8821	.2176	4.2431	.4160	.9445	.9774	1.0024
12	.0648	1.2021	1.0000	.8945	.2318	3.9832	.4928	.9445	.9774	1.0024
13	.0800	1.3411	1.0000	.8973	.2437	3.7881	.5362	.9445	.9774	1.0024
14	.1054	1.4858	1.0000	.8994	.2578	3.5813	.5776	.9445	.9774	1.0024
15	.1334	1.5830	1.0000	.9003	.2681	3.4426	.6033	.9445	.9774	1.0024
16	.1588	1.6448	1.0000	.8996	.2755	3.3510	.6185	.9445	.9774	1.0024
17	.1841	1.6880	1.0000	.9002	.2805	3.2915	.6290	.9445	.9774	1.0024
18	.2070	1.7284	1.0000	.9006	.2853	3.2359	.6387	.9445	.9774	1.0024
19	.2349	1.7659	1.0000	.9019	.2895	3.1885	.6477	.9445	.9774	1.0024
20	.3340	1.8996	1.0000	.9057	.3057	3.0195	.6780	.9445	.9774	1.0024
21	.4991	2.1154	1.0000	.9137	.3335	2.7676	.7229	.9445	.9774	1.0024
22	.7684	2.4369	1.0000	.9258	.3800	2.4291	.7801	.9445	.9774	1.0024
23	1.0020	2.7038	1.0000	.9351	.4234	2.1802	.8200	.9445	.9774	1.0024
24	1.2306	2.9486	1.0011	.9426	.4678	1.9755	.8513	.9452	.9777	1.0024
25	1.5303	3.2585	1.0025	.9501	.5301	1.7459	.8844	.9462	.9781	1.0023
26	1.7183	3.4455	1.0035	.9536	.5710	1.6222	.9014	.9468	.9784	1.0023
27	1.9545	3.6796	1.0046	.9590	.6247	1.4846	.9209	.9476	.9787	1.0022
28	2.1552	3.8479	1.0061	.9621	.6662	1.3942	.9332	.9486	.9791	1.0022
29	2.4346	4.0498	1.0086	.9665	.7183	1.2962	.9471	.9502	.9798	1.0021
30	2.6988	4.2190	1.0109	.9690	.7650	1.2198	.9572	.9518	.9804	1.0021
31	2.8638	4.3026	1.0124	.9709	.7885	1.1851	.9621	.9528	.9808	1.0020
32	3.3465	4.4879	1.0187	.9778	.8424	1.1162	.9740	.9570	.9826	1.0018
33	3.9459	4.6439	1.0281	.9835	.8932	1.0626	.9833	.9634	.9852	1.0016
34	4.6622	4.7934	1.0400	.9904	.9449	1.0160	.9925	.9713	.9884	1.0012
* 35	5.3327	4.8430	1.0535	.9955	.9685	1.0041	.9968	.9803	.9921	1.0008
36	5.9296	4.8469	1.0688	.9984	.9810	1.0057	.9984	.9904	.9962	1.0004
** 37	6.4961	4.8684	1.0833	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
38	7.1438	4.8516	1.1051	1.0018	1.0125	1.0076	1.0003	1.0143	1.0057	.9994
39	7.7533	4.8450	1.1137	1.0029	1.0170	1.0109	1.0006	1.0200	1.0079	.9992
40	8.3375	4.8280	1.1366	1.0040	1.0308	1.0179	1.0005	1.0349	1.0138	.9985
41	8.8913	4.8114	1.1594	1.0051	1.0443	1.0248	1.0005	1.0497	1.0196	.9979
42	9.4831	4.8010	1.1739	1.0044	1.0544	1.0277	.9998	1.0590	1.0232	.9975
43	10.1613	4.7867	1.1942	1.0057	1.0660	1.0341	.9999	1.0721	1.0282	.9970

TABLE 5 NOL BOUNDARY LAYER CHANNEL PROFILE DATA  
RUN NO 1062

STA = 1.448E+00 M	ME = 4.742E+00	MPW = 4.834E+00	DELP = 7.202E+00 CM
PO = 1.025E+05 N/M2	DE = 1.409E-02 KG/M3	DPW = 1.300E-02 KG/M3	DSTRP = 2.219E+00 CM
TO = 3.536E+02 DEG.K	TE = 6.433E+01 DEG.K	TPW = 6.229E+01 DEG.K	THP = 3.114E-01 CM
PSW = 2.356E+02 N/M2	UE = 7.624E+02 M/S	UPW = 7.650E+02 M/S	THEP = 5.716E-01 CM
TW = 2.950E+02 DEG.K	RE = 2.494E+06 1/M	RPW = 2.395E+06 1/M	THHP = 2.262E-01 CM

N	Y (CM)	M	PS/PSW	TT/TTE	D/DE	T/TE	U/UE	DP/DPE	TP/TPE	UP/UPE
1	0.0000	0.0000	1.0000	.8343	.1948	4.5857	0.0000	.9227	.9683	1.0035
2	.0063	.0383	1.0000	.8341	.1949	4.5835	.0173	.9227	.9683	1.0035
3	.0114	.0629	1.0000	.8345	.1949	4.5833	.0284	.9227	.9683	1.0035
4	.0165	.0893	1.0000	.8297	.1962	4.5534	.0402	.9227	.9683	1.0035
5	.0216	.1118	1.0000	.8289	.1966	4.5448	.0503	.9227	.9683	1.0035
6	.0267	.1438	1.0000	.8338	.1957	4.5641	.0648	.9227	.9683	1.0035
7	.0368	.2245	1.0000	.8406	.1953	4.5742	.1013	.9227	.9683	1.0035
8	.0470	.2619	1.0000	.8371	.1968	4.5389	.1177	.9227	.9683	1.0035
9	.0546	.3040	1.0000	.8346	.1984	4.5041	.1361	.9227	.9683	1.0035
10	.0825	.5686	1.0000	.8442	.2050	4.3586	.2503	.9227	.9683	1.0035
11	.1130	.8026	1.0000	.8502	.2158	4.1399	.3444	.9227	.9683	1.0035
12	.1410	1.0138	1.0000	.8607	.2276	3.9245	.4235	.9227	.9683	1.0035
13	.1791	1.1940	1.0000	.8703	.2400	3.7225	.4858	.9227	.9683	1.0035
14	.2045	1.3245	1.0000	.8765	.2505	3.5663	.5275	.9227	.9683	1.0035
15	.2324	1.3988	1.0000	.8776	.2577	3.4672	.5493	.9227	.9683	1.0035
16	.2730	1.5183	1.0000	.8839	.2687	3.3253	.5839	.9227	.9683	1.0035
17	.5144	1.8809	1.0000	.8840	.3139	2.8457	.6692	.9227	.9683	1.0035
18	.7531	2.1115	1.0000	.8892	.3458	2.5839	.7158	.9227	.9683	1.0035
19	.9284	2.2668	1.0000	.8920	.3695	2.4180	.7434	.9227	.9683	1.0035
20	1.2662	2.5424	1.0015	.8957	.4167	2.1474	.7857	.9236	.9687	1.0035
21	1.5431	2.7671	1.0031	.9017	.4577	1.9579	.8166	.9247	.9692	1.0034
22	1.7386	2.9313	1.0043	.9061	.4897	1.8322	.8368	.9255	.9695	1.0034
23	2.0358	3.1693	1.0060	.9160	.5371	1.6734	.8646	.9266	.9700	1.0033
24	2.2923	3.3619	1.0083	.9201	.5808	1.5511	.8830	.9281	.9706	1.0033
25	2.4905	3.5087	1.0101	.9227	.6160	1.4650	.8956	.9293	.9711	1.0032
26	2.7089	3.6642	1.0120	.9266	.6542	1.3820	.9085	.9305	.9716	1.0032
27	2.9985	3.8482	1.0146	.9344	.6992	1.2964	.9240	.9322	.9723	1.0031
28	3.2322	3.9872	1.0177	.9374	.7375	1.2328	.9336	.9343	.9732	1.0030
29	3.5420	4.1373	1.0223	.9418	.7804	1.1703	.9439	.9373	.9744	1.0028
30	3.6970	4.2037	1.0246	.9442	.7997	1.1446	.9485	.9388	.9751	1.0028
31	3.9002	4.2797	1.0276	.9482	.8214	1.1177	.9542	.9408	.9759	1.0027
32	4.4615	4.4439	1.0370	.9574	.8714	1.0633	.9664	.9469	.9784	1.0024
33	4.9720	4.5530	1.0461	.9659	.9058	1.0318	.9753	.9528	.9809	1.0021
34	5.5664	4.6493	1.0585	.9767	.9377	1.0085	.9847	.9609	.9842	1.0018
35	6.0566	4.6949	1.0691	.9849	.9543	1.0010	.9906	.9678	.9870	1.0014
36	6.6688	4.7363	1.0862	.9920	.9764	.9939	.9958	.9788	.9915	1.0009
* 37	7.2022	4.7418	1.1014	.9978	.9862	.9978	.9989	.9885	.9954	1.0005
** 38	7.8346	4.7417	1.1193	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
39	8.4112	4.7296	1.1356	1.0012	1.0091	1.0054	1.0002	1.0104	1.0041	.9995
40	8.9878	4.7120	1.1603	1.0020	1.0240	1.0123	.9998	1.0260	1.0103	.9988
41	9.4907	4.6968	1.1818	1.0031	1.0364	1.0188	.9998	1.0396	1.0156	.9983
42	10.1206	4.6879	1.1946	1.0043	1.0431	1.0232	1.0000	1.0476	1.0188	.9979

TABLE 5 NOL BOUNDARY LAYER CHANNEL PROFILE DATA  
RUN NO 1073

STA = 1.702E+00 M ME = 4.877E+00 MPW = 4.905E+00 DELP = 6.013E+00 CM  
 PO = 5.151E+05 N/M2 DE = 6.509E-02 KG/M3 DPW = 6.374E-02 KG/M3 DSTRP = 1.986E+00 CM  
 TO = 3.466E+02 DEG.K TE = 6.020E+01 DEG.K TPW = 5.969E+01 DEG.K THP = 2.228E-01 CM  
 PSW = 1.089E+03 N/M2 UE = 7.586E+02 M/S UPW = 7.592E+02 M/S THMP = 4.074E-01 CM  
 TW = 2.933E+02 DEG.K RE = 1.236E+07 1/M RPW = 1.223E+07 1/M THMP = 1.066E-01 CM

N	Y(CM)	M	PS/PSW	IT/TTE	D/DE	T/TE	U/UE	DP/DPE	TP/TPE	UP/UPE
1	0.0000	0.0000	1.0000	.8463	.1993	4.8719	0.0000	.9793	.9916	1.0009
2	.0063	.1190	1.0000	.8478	.1995	4.8668	.0538	.9793	.9916	1.0009
3	.0089	.1579	1.0000	.8489	.1997	4.8627	.0714	.9793	.9916	1.0009
4	.0165	.2559	1.0000	.8513	.2007	4.8377	.1154	.9793	.9916	1.0009
5	.0216	.3166	1.0000	.8506	.2023	4.8005	.1422	.9793	.9916	1.0009
6	.0267	.4253	1.0000	.8531	.2049	4.7398	.1899	.9793	.9916	1.0009
7	.0343	.5317	1.0000	.8561	.2082	4.6648	.2355	.9793	.9916	1.0009
8	.0444	.7361	1.0000	.8652	.2161	4.4941	.3200	.9793	.9916	1.0009
9	.0495	.8480	1.0000	.8695	.2219	4.3763	.3637	.9793	.9916	1.0009
10	.0572	.9182	1.0000	.8721	.2260	4.2965	.3902	.9793	.9916	1.0009
11	.0749	1.1216	1.0000	.8825	.2392	4.0593	.4634	.9793	.9916	1.0009
12	.1080	1.3301	1.0000	.8940	.2554	3.8015	.5318	.9793	.9916	1.0009
13	.1308	1.4112	1.0000	.8941	.2638	3.6813	.5552	.9793	.9916	1.0009
14	.1588	1.4760	1.0000	.8951	.2705	3.5893	.5734	.9793	.9916	1.0009
15	.1816	1.5204	1.0000	.8969	.2750	3.5310	.5858	.9793	.9916	1.0009
16	.2070	1.5573	1.0000	.8957	.2797	3.4724	.5950	.9793	.9916	1.0009
17	.2324	1.5920	1.0000	.8971	.2833	3.4273	.6043	.9793	.9916	1.0009
18	.3366	1.7098	1.0000	.9009	.2967	3.2731	.6343	.9793	.9916	1.0009
19	.5448	1.9300	1.0000	.9094	.3237	3.0003	.6855	.9793	.9916	1.0009
20	.7658	2.1524	1.0000	.9183	.3539	2.7440	.7311	.9793	.9916	1.0009
21	1.0605	2.4284	1.0000	.9289	.3958	2.4537	.7800	.9793	.9916	1.0009
22	1.3957	2.7555	1.0000	.9409	.4515	2.1507	.8286	.9793	.9916	1.0009
23	1.5989	2.9565	1.0000	.9461	.4900	1.9818	.8534	.9793	.9916	1.0009
24	1.7894	3.1530	1.0000	.9497	.5308	1.8296	.8745	.9793	.9916	1.0009
25	1.8351	3.1985	1.0000	.9510	.5403	1.7973	.8792	.9793	.9916	1.0009
26	2.0815	3.4398	1.0000	.9572	.5932	1.6369	.9024	.9793	.9916	1.0009
27	2.2416	3.5864	1.0000	.9606	.6273	1.5480	.9149	.9793	.9916	1.0009
28	2.3685	3.6968	1.0000	.9630	.6539	1.4849	.9237	.9793	.9916	1.0009
29	2.8816	4.0948	1.0022	.9693	.7593	1.2819	.9506	.9808	.9923	1.0008
30	3.4277	4.3829	1.0058	.9749	.8427	1.1591	.9675	.9833	.9933	1.0007
31	3.9179	4.5581	1.0090	.9797	.8956	1.0941	.9776	.9856	.9942	1.0006
32	4.4336	4.6824	1.0127	.9840	.9347	1.0520	.9848	.9881	.9952	1.0005
33	4.9847	4.7890	1.0166	.9889	.9688	1.0191	.9913	.9909	.9963	1.0004
34	5.4801	4.8344	1.0202	.9924	.9840	1.0069	.9947	.9934	.9973	1.0003
35	6.0135	4.8595	1.0250	.9971	.9923	1.0031	.9979	.9967	.9987	1.0001
36	6.5316	4.8770	1.0298	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
37	6.9736	4.8779	1.0339	1.0005	1.0039	1.0001	1.0003	1.0029	1.0011	.9999
38	7.4689	4.8717	1.0415	1.0016	1.0079	1.0034	1.0006	1.0081	1.0032	.9997
39	7.9667	4.8678	1.0463	1.0025	1.0104	1.0056	1.0009	1.0114	1.0046	.9995
40	8.5052	4.8655	1.0492	1.0018	1.0131	1.0057	1.0005	1.0134	1.0054	.9994
41	8.9903	4.8576	1.0590	1.0034	1.0181	1.0101	1.0010	1.0202	1.0080	.9992
42	9.6228	4.8514	1.0671	1.0031	1.0240	1.0119	1.0006	1.0258	1.0102	.9989
43	10.1638	4.8483	1.0708	1.0036	1.0260	1.0134	1.0008	1.0283	1.0112	.9988

TABLE 5 NOL BOUNDARY LAYER CHANNEL PROFILE DATA  
RUN NO 1083

STA = 1.905E+00 M	ME = 4.861E+00	MPW = 4.897E+00	DELP = 5.726E+00 CM
PO = 5.149E+05 N/M2	DE = 6.380E-02 KG/M3	DPW = 6.352E-02 KG/M3	DSTRP = 2.093E+00 CM
TO = 3.500E+02 DEG.K	TE = 6.113E+01 DEG.K	TPW = 6.103E+01 DEG.K	THP = 2.275E-01 CM
PSW = 1.099E+03 N/M2	UE = 7.619E+02 M/S	UPW = 7.620E+02 M/S	THEP = 4.143E-01 CM
TW = 2.959E+02 DEG.K	RE = 1.196E+07 1/M	RPW = 1.193E+07 1/M	THMP = 9.597E-02 CM

N	Y (CM)	M	PS/PSW	TT/TTE	D/DE	T/TE	U/UE	DP/DPE	TP/TPE	UP/UPE
1	0.0000	0.0000	1.0000	.8452	.2054	4.8396	0.0000	.9957	.9983	1.0002
2	.0063	.1336	1.0000	.8465	.2058	4.8298	.0604	.9957	.9983	1.0002
3	.0114	.1995	1.0000	.8476	.2065	4.8148	.0901	.9957	.9983	1.0002
4	.0165	.2531	1.0000	.8491	.2071	4.8001	.1141	.9957	.9983	1.0002
5	.0216	.3360	1.0000	.8515	.2085	4.7677	.1509	.9957	.9983	1.0002
6	.0292	.4510	1.0000	.8547	.2114	4.7025	.2012	.9957	.9983	1.0002
7	.0343	.5240	1.0000	.8571	.2137	4.6522	.2325	.9957	.9983	1.0002
8	.0419	.6911	1.0000	.8640	.2201	4.5159	.3021	.9957	.9983	1.0002
9	.0495	.8022	1.0000	.8689	.2255	4.4080	.3465	.9957	.9983	1.0002
10	.0546	.8976	1.0000	.8729	.2309	4.3044	.3831	.9957	.9983	1.0002
11	.0622	.9917	1.0000	.8775	.2367	4.1986	.4180	.9957	.9983	1.0002
12	.0724	1.0845	1.0000	.8822	.2431	4.0895	.4512	.9957	.9983	1.0002
13	.0927	1.2392	1.0000	.8908	.2547	3.9024	.5036	.9957	.9983	1.0002
14	.1207	1.3545	1.0000	.8938	.2655	3.7439	.5392	.9957	.9983	1.0002
15	.1435	1.4221	1.0000	.8953	.2723	3.6501	.5589	.9957	.9983	1.0002
16	.1715	1.4787	1.0000	.8965	.2783	3.5714	.5749	.9957	.9983	1.0002
17	.1943	1.5136	1.0000	.8973	.2821	3.5232	.5845	.9957	.9983	1.0002
18	.2222	1.5507	1.0000	.8981	.2863	3.4724	.5944	.9957	.9983	1.0002
19	.2451	1.5786	1.0000	.8986	.2895	3.4338	.6018	.9957	.9983	1.0002
20	.2654	1.5994	1.0000	.8993	.2918	3.4065	.6073	.9957	.9983	1.0002
21	.3492	1.6853	1.0000	.9027	.3015	3.2964	.6295	.9957	.9983	1.0002
22	.4712	1.8058	1.0000	.9078	.3160	3.1460	.6589	.9957	.9983	1.0002
23	.7226	2.0319	1.0000	.9186	.3450	2.8808	.7095	.9957	.9983	1.0002
24	.9995	2.2711	1.0000	.9291	.3796	2.6185	.7560	.9957	.9983	1.0002
25	1.2332	2.4752	1.0000	.9371	.4123	2.4110	.7907	.9957	.9983	1.0002
26	1.4948	2.7096	1.0000	.9451	.4534	2.1924	.8254	.9957	.9983	1.0002
27	1.7767	2.9786	1.0000	.9538	.5050	1.9685	.8597	.9957	.9983	1.0002
28	2.0282	3.2175	1.0000	.9587	.5560	1.7879	.8850	.9957	.9983	1.0002
29	2.2542	3.4216	1.0000	.9626	.6026	1.6495	.9040	.9957	.9983	1.0002
30	2.5057	3.6472	1.0000	.9664	.6576	1.5117	.9225	.9957	.9983	1.0002
31	2.7089	3.8214	1.0000	.9690	.7024	1.4152	.9352	.9957	.9983	1.0002
32	3.2855	4.2194	1.0000	.9747	.8123	1.2237	.9602	.9957	.9983	1.0002
33	3.7071	4.4111	1.0000	.9779	.8683	1.1447	.9709	.9957	.9983	1.0002
34	4.2253	4.5716	1.0000	.9829	.9149	1.0865	.9803	.9957	.9983	1.0002
35	4.7257	4.6949	1.0000	.9877	.9506	1.0456	.9876	.9957	.9983	1.0002
36	5.2337	4.7785	1.0006	.9926	.9741	1.0210	.9933	.9961	.9984	1.0002
* 37	5.7264	4.8179	1.0023	.9954	.9863	1.0102	.9962	.9974	.9989	1.0001
38	6.2548	4.8484	1.0042	.9974	.9966	1.0017	.9982	.9987	.9995	1.0001
** 39	6.7500	4.8610	1.0060	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
40	7.2631	4.8713	1.0079	1.0014	1.0040	.9978	1.0010	1.0013	1.0005	.9999
41	7.7686	4.8898	1.0097	1.0028	1.0106	.9931	1.0025	1.0026	1.0010	.9999
42	8.3706	4.8820	1.0191	1.0031	1.0171	.9959	1.0023	1.0093	1.0037	.9996
43	8.7693	4.8804	1.0212	1.0039	1.0178	.9973	1.0027	1.0108	1.0043	.9996
44	9.3434	4.8703	1.0334	1.0043	1.0260	1.0012	1.0025	1.0194	1.0077	.9992
45	9.8819	4.8696	1.0342	1.0047	1.0262	1.0018	1.0027	1.0199	1.0079	.9992
46	10.1816	4.8704	1.0333	1.0038	1.0265	1.0006	1.0022	1.0193	1.0077	.9992

TABLE 5 NOL BOUNDARY LAYER CHANNEL PROFILE DATA  
RUN NO 1084

STA = 1.905E+00 M ME = 4.789E+00 MPW = 4.798E+00 DELP = 7.634E+00 CM  
 PO = 1.018E+05 N/M2 DE = 1.367E-02 KG/M3 DPW = 1.355E-02 KG/M3 DSTRP = 2.672E+00 CM  
 TO = 3.532E+02 DEG.K TE = 6.322E+01 DEG.K TPW = 6.298E+01 DEG.K THP = 3.454E-01 CM  
 PSW = 2.441E+02 N/M2 UE = 7.633E+02 M/S UPW = 7.636E+02 M/S THEP = 6.273E-01 CM  
 TW = 2.937E+02 DEG.K RE = 2.471E+06 1/M RPW = 2.460E+06 1/M THMP = 2.195E-01 CM

N	Y (CM)	M	PS/PSW	TT/TTE	D/DE	T/TE	U/UE	DP/DPE	TP/TPE	UP/UPE
1	0.0000	0.0000	1.0000	.8315	.2124	4.6455	0.0000	.9906	.9962	1.0004
2	.0063	.0339	1.0000	.8314	.2125	4.6436	.0152	.9906	.9962	1.0004
3	.0140	.0721	1.0000	.8330	.2123	4.6492	.0325	.9906	.9962	1.0004
4	.0191	.0973	1.0000	.8322	.2127	4.6404	.0438	.9906	.9962	1.0004
5	.0241	.1209	1.0000	.8305	.2133	4.6262	.0543	.9906	.9962	1.0004
6	.0317	.1534	1.0000	.8311	.2136	4.6212	.0689	.9906	.9962	1.0004
7	.0343	.1680	1.0000	.8351	.2127	4.6393	.0756	.9906	.9962	1.0004
8	.0444	.2347	1.0000	.8322	.2146	4.5988	.1051	.9906	.9962	1.0004
9	.0572	.2905	1.0000	.8351	.2151	4.5881	.1300	.9906	.9962	1.0004
10	.0825	.4932	1.0000	.8370	.2213	4.4592	.2175	.9906	.9962	1.0004
11	.1080	.6852	1.0000	.8463	.2283	4.3223	.2975	.9906	.9962	1.0004
12	.1308	.8502	1.0000	.8499	.2379	4.1483	.3616	.9906	.9962	1.0004
13	.1588	1.0133	1.0000	.8615	.2471	3.9932	.4228	.9906	.9962	1.0004
14	.1841	1.1427	1.0000	.8681	.2566	3.8454	.4679	.9906	.9962	1.0004
15	.2096	1.2326	1.0000	.8708	.2645	3.7313	.4972	.9906	.9962	1.0004
16	.2349	1.2995	1.0000	.8735	.2705	3.6479	.5183	.9906	.9962	1.0004
17	.2730	1.4044	1.0000	.8797	.2800	3.5245	.5506	.9906	.9962	1.0004
18	.5118	1.7001	1.0000	.8838	.3154	3.1289	.6280	.9906	.9962	1.0004
19	.7887	1.8992	1.0000	.8882	.3424	2.8825	.6733	.9906	.9962	1.0004
20	1.0198	2.0616	1.0000	.8909	.3668	2.6904	.7061	.9906	.9962	1.0004
21	1.2865	2.2068	1.0000	.8940	.3900	2.5303	.7330	.9906	.9962	1.0004
22	1.5253	2.3613	1.0000	.9012	.4146	2.3802	.7607	.9906	.9962	1.0004
23	1.7945	2.5452	1.0000	.9049	.4481	2.2023	.7887	.9906	.9962	1.0004
24	2.0637	2.7353	1.0000	.9107	.4842	2.0382	.8154	.9906	.9962	1.0004
25	2.2949	2.8874	1.0000	.9140	.5155	1.9142	.8342	.9906	.9962	1.0004
26	2.5362	3.0586	1.0000	.9215	.5504	1.7931	.8553	.9906	.9962	1.0004
27	3.0594	3.4378	1.0000	.9326	.6371	1.5490	.8934	.9906	.9962	1.0004
28	3.5852	3.7839	1.0000	.9390	.7268	1.3578	.9207	.9906	.9962	1.0004
29	4.0881	4.0738	1.0000	.9475	.8053	1.2255	.9417	.9906	.9962	1.0004
30	4.5910	4.2947	1.0000	.9542	.8681	1.1369	.9562	.9906	.9962	1.0004
31	5.1016	4.4497	1.0000	.9617	.9111	1.0832	.9670	.9906	.9962	1.0004
32	5.4953	4.5550	1.0000	.9687	.9390	1.0510	.9751	.9906	.9962	1.0004
33	6.1074	4.6552	1.0001	.9776	.9639	1.0239	.9836	.9906	.9962	1.0004
34	6.6205	4.7117	1.0028	.9839	.9794	1.0104	.9890	.9926	.9970	1.0003
35	7.1056	4.7441	1.0053	.9896	.9872	1.0049	.9931	.9944	.9977	1.0002
* 36	7.6340	4.7712	1.0081	.9948	.9940	1.0009	.9967	.9963	.9985	1.0002
37	8.1293	4.7834	1.0107	.9974	.9981	.9993	.9985	.9981	.9993	1.0001
** 38	8.6296	4.7889	1.0133	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
39	9.1326	4.7791	1.0252	1.0018	1.0065	1.0052	1.0005	1.0084	1.0033	.9996
40	9.6914	4.7732	1.0325	1.0024	1.0111	1.0078	1.0006	1.0135	1.0054	.9994
41	10.1816	4.7642	1.0437	1.0042	1.0171	1.0127	1.0011	1.0213	1.0085	.9991

TABLE 5 NOL BOUNDARY LAYER CHANNEL PROFILE DATA  
RUN NO 1151

STA = 2.057E+00 M ME = 4.890E+00 MPW = 4.904E+00 DELP = 5.986E+00 CM  
 PO = 5.156E+05 N/M2 DE = 6.444E-02 KG/M3 DPW = 6.361E-02 KG/M3 DSTRP = 2.197E+00 CM  
 TO = 3.501E+02 DEG.K TE = 6.054E+01 DEG.K TPW = 6.023E+01 DEG.K THP = 2.426E-01 CM  
 PSW = 1.091E+03 N/M2 UE = 7.628E+02 M/S UpW = 7.631E+02 M/S THEP = 4.422E-01 CM  
 TW = 2.952E+02 DEG.K RE = 1.223E+07 1/M RPW = 1.215E+07 1/M THHP = 1.117E-01 CM

N	Y(CM)	M	PS/PSW	IT/TTE	D/DE	T/TE	U/UE	DP/DPE	TP/TPE	UP/UPE
1	0.0000	0.0000	1.0000	.8430	.2014	4.8752	0.0000	.9871	.9948	1.0005
2	.0063	.1384	1.0000	.8436	.2021	4.8596	.0624	.9871	.9948	1.0005
3	.0114	.2135	1.0000	.8444	.2029	4.8390	.0961	.9871	.9948	1.0005
4	.0165	.3158	1.0000	.8457	.2048	4.7950	.1414	.9871	.9948	1.0005
5	.0241	.4394	1.0000	.8472	.2082	4.7172	.1951	.9871	.9948	1.0005
6	.0343	.5935	1.0000	.8521	.2133	4.6030	.2604	.9871	.9948	1.0005
7	.0419	.7316	1.0000	.8578	.2192	4.4810	.3167	.9871	.9948	1.0005
8	.0495	.8325	1.0000	.8622	.2243	4.3787	.3562	.9871	.9948	1.0005
9	.0825	1.1926	1.0000	.8800	.2479	3.9617	.4854	.9871	.9948	1.0005
10	.1080	1.3314	1.0000	.8875	.2592	3.7888	.5300	.9871	.9948	1.0005
11	.1435	1.4374	1.0000	.8892	.2699	3.6387	.5607	.9871	.9948	1.0005
12	.1689	1.4900	1.0000	.8897	.2756	3.5627	.5751	.9871	.9948	1.0005
13	.1943	1.5244	1.0000	.8908	.2792	3.5169	.5846	.9871	.9948	1.0005
14	.2324	1.5716	1.0000	.8917	.2845	3.4517	.5971	.9871	.9948	1.0005
15	.3010	1.6467	1.0000	.8946	.2928	3.3542	.6167	.9871	.9948	1.0005
16	.4813	1.8161	1.0000	.9023	.3124	3.1439	.6585	.9871	.9948	1.0005
17	.7277	2.0289	1.0000	.9126	.3393	2.8944	.7058	.9871	.9948	1.0005
18	1.0147	2.2566	1.0000	.9234	.3712	2.6457	.7506	.9871	.9948	1.0005
19	1.2967	2.4890	1.0000	.9344	.4069	2.4134	.7907	.9871	.9948	1.0005
20	1.7285	2.8587	1.0000	.9471	.4724	2.0789	.8429	.9871	.9948	1.0005
21	2.0409	3.1511	1.0000	.9537	.5317	1.8471	.8757	.9871	.9948	1.0005
22	2.2949	3.3783	1.0000	.9582	.5818	1.6880	.8976	.9871	.9948	1.0005
23	2.7114	3.7433	1.0000	.9669	.6678	1.4705	.9282	.9871	.9948	1.0005
24	3.4557	4.2691	1.0000	.9725	.8112	1.2106	.9606	.9871	.9948	1.0005
25	4.3421	4.6011	1.0014	.9792	.9090	1.0818	.9786	.9881	.9952	1.0005
26	5.2108	4.7636	1.0058	.9854	.9601	1.0288	.9881	.9913	.9965	1.0004
* 27	5.9855	4.8537	1.0098	.9940	.9854	1.0064	.9957	.9940	.9976	1.0003
28	6.8389	4.8800	1.0142	.9976	.9948	1.0011	.9985	.9971	.9988	1.0001
** 29	7.6518	4.8902	1.0183	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
30	8.4036	4.8837	1.0262	1.0011	1.0044	1.0033	1.0003	1.0055	1.0022	.9998
31	9.3408	4.8817	1.0286	1.0023	1.0049	1.0052	1.0008	1.0072	1.0029	.9997
32	10.4229	4.8791	1.0319	1.0039	1.0057	1.0076	1.0015	1.0095	1.0038	.9996

TABLE 5 NOL BOUNDARY LAYER CHANNEL PROFILE DATA  
RUN NO 1152

STA = 2.057E+00 M ME = 4.825E+00 MPW = 4.817E+00 DELP = 8.528E+00 CM  
 PO = 1.042E+05 N/M2 DE = 1.372E-02 KG/M3 OPW = 1.372E-02 KG/M3 DSTRP = 2.823E+00 CM  
 TO = 3.549E+02 DEG.K TE = 6.274E+01 DEG.K TPW = 6.274E+01 DEG.K THP = 3.684E-01 CM  
 PSW = 2.445E+02 N/M2 UE = 7.664E+02 M/S UPW = 7.662E+02 M/S THEP = 6.678E-01 CM  
 TW = 2.942E+02 DEG.K RE = 2.511E+06 1/M RPW = 2.511E+06 1/M TMHP = 2.427E-01 CM

N	Y (CM)	M	PS/PSW	IT/TTE	D/DE	T/TE	U/UE	DP/DPE	TP/TPE	UP/UPE
1	0.0000	0.0000	1.0000	.8289	.2133	4.6891	0.0000	1.0000	1.0000	1.0000
2	.0063	.0317	1.0000	.8299	.2133	4.6877	.0142	1.0000	1.0000	1.0000
3	.0241	.1164	1.0000	.8303	.2135	4.6841	.0522	1.0000	1.0000	1.0000
4	.0317	.1447	1.0000	.8327	.2132	4.6905	.0649	1.0000	1.0000	1.0000
5	.0368	.1799	1.0000	.8303	.2143	4.6667	.0805	1.0000	1.0000	1.0000
6	.0444	.1984	1.0000	.8309	.2144	4.6637	.0888	1.0000	1.0000	1.0000
7	.0572	.3130	1.0000	.8330	.2164	4.6213	.1394	1.0000	1.0000	1.0000
8	.0648	.3672	1.0000	.8349	.2174	4.5989	.1632	1.0000	1.0000	1.0000
9	.0902	.5681	1.0000	.8419	.2235	4.4735	.2490	1.0000	1.0000	1.0000
10	.1181	.7844	1.0000	.8481	.2341	4.2717	.3360	1.0000	1.0000	1.0000
11	.1435	.9224	1.0000	.8586	.2409	4.1504	.3894	1.0000	1.0000	1.0000
12	.1689	1.0674	1.0000	.8641	.2512	3.9810	.4414	1.0000	1.0000	1.0000
13	.1918	1.1559	1.0000	.8698	.2576	3.8827	.4720	1.0000	1.0000	1.0000
14	.2197	1.2466	1.0000	.8738	.2652	3.7706	.5017	1.0000	1.0000	1.0000
15	.2477	1.3213	1.0000	.8739	.2729	3.6638	.5241	1.0000	1.0000	1.0000
16	.2858	1.3953	1.0000	.8768	.2801	3.5700	.5463	1.0000	1.0000	1.0000
17	.3289	1.4614	1.0000	.8794	.2869	3.4855	.5654	1.0000	1.0000	1.0000
18	.3899	1.5506	1.0000	.8787	.2979	3.3566	.5887	1.0000	1.0000	1.0000
19	.5982	1.7372	1.0000	.8818	.3215	3.1107	.6350	1.0000	1.0000	1.0000
20	.9309	1.9496	1.0000	.8830	.3524	2.8376	.6806	1.0000	1.0000	1.0000
21	1.2941	2.1504	1.0000	.8893	.3826	2.6134	.7204	1.0000	1.0000	1.0000
22	1.6777	2.3842	1.0000	.8959	.4216	2.3717	.7609	1.0000	1.0000	1.0000
23	2.0511	2.6183	1.0000	.9053	.4630	2.1598	.7974	1.0000	1.0000	1.0000
24	2.5260	2.9311	1.0000	.9164	.5244	1.9071	.8388	1.0000	1.0000	1.0000
25	3.3160	3.4734	1.0000	.9301	.6487	1.5416	.8937	1.0000	1.0000	1.0000
26	4.3091	4.0905	1.0000	.9443	.8137	1.2290	.9398	1.0000	1.0000	1.0000
27	5.1499	4.4300	1.0000	.9562	.9105	1.0983	.9621	1.0000	1.0000	1.0000
28	5.9703	4.6316	1.0000	.9681	.9660	1.0352	.9766	1.0000	1.0000	1.0000
29	6.7653	4.7407	1.0000	.9803	.9909	1.0092	.9870	1.0000	1.0000	1.0000
30	7.6035	4.8014	1.0000	.9902	1.0017	.9983	.9942	1.0000	1.0000	1.0000
* 31	8.5281	4.8266	1.0000	.9979	1.0026	.9974	.9990	1.0000	1.0000	1.0000
** 32	9.2494	4.8253	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
33	10.1841	4.8239	1.0000	1.0013	.9982	1.0018	1.0006	1.0000	1.0000	1.0000

TABLE 5 NOL BOUNDARY LAYER CHANNEL PROFILE DATA  
RUN NO 1121

STA = 2.210E+00 M ME = 4.902E+00 MPW = 4.896E+00 DELP = 6.100E+00 CM  
 PO = 5.193E+05 N/M2 DE = 6.433E-02 KG/M3 DPW = 6.433E-02 KG/M3 DSTRP = 2.275E+00 CM  
 TO = 3.506E+02 DEG.K TE = 6.039E+01 DEG.K TPW = 6.039E+01 DEG.K THP = 2.473E-01 CM  
 PSW = 1.109E+03 N/M2 UE = 7.636E+02 M/S UPW = 7.636E+02 M/S THEP = 4.496E-01 CM  
 TW = 2.963E+02 DEG.K RE = 1.226E+07 1/M RPW = 1.226E+07 1/M THMP = 1.090E-01 CM

N	Y (CM)	M	PS/PSW	TT/TTE	D/DE	T/TE	U/UE	DP/DPE	TP/TPE	UP/UPE
1	0.0000	0.0000	1.0000	.8452	.2038	4.9070	0.0000	1.0001	1.0000	1.0000
2	.0063	.1578	1.0000	.8452	.2049	4.8824	.0711	1.0001	1.0000	1.0000
3	.0140	.2731	1.0000	.8463	.2066	4.8412	.1226	1.0001	1.0000	1.0000
4	.0165	.3242	1.0000	.8479	.2074	4.8213	.1452	1.0001	1.0000	1.0000
5	.0241	.4166	1.0000	.8502	.2097	4.7706	.1856	1.0001	1.0000	1.0000
6	.0267	.4709	1.0000	.8521	.2112	4.7366	.2091	1.0001	1.0000	1.0000
7	.0343	.6094	1.0000	.8554	.2163	4.6229	.2673	1.0001	1.0000	1.0000
8	.0394	.6992	1.0000	.8574	.2206	4.5344	.3037	1.0001	1.0000	1.0000
9	.0444	.7725	1.0000	.8609	.2240	4.4650	.3330	1.0001	1.0000	1.0000
10	.0521	.8718	1.0000	.8684	.2285	4.3765	.3721	1.0001	1.0000	1.0000
11	.0546	.9365	1.0000	.8733	.2319	4.3136	.3968	1.0001	1.0000	1.0000
12	.0597	1.0043	1.0000	.8762	.2363	4.2332	.4215	1.0001	1.0000	1.0000
13	.0851	1.2055	1.0000	.8873	.2506	3.9913	.4913	1.0001	1.0000	1.0000
14	.1105	1.3255	1.0000	.8945	.2603	3.8429	.5301	1.0001	1.0000	1.0000
15	.1359	1.3951	1.0000	.8962	.2671	3.7451	.5508	1.0001	1.0000	1.0000
16	.1588	1.4420	1.0000	.8960	.2722	3.6738	.5638	1.0001	1.0000	1.0000
17	.1867	1.4880	1.0000	.8994	.2764	3.6190	.5775	1.0001	1.0000	1.0000
18	.2096	1.5184	1.0000	.9005	.2795	3.5781	.5859	1.0001	1.0000	1.0000
19	.2400	1.5570	1.0000	.8998	.2843	3.5181	.5958	1.0001	1.0000	1.0000
20	.2730	1.5925	1.0000	.8991	.2888	3.4633	.6046	1.0001	1.0000	1.0000
21	.5220	1.8187	1.0000	.9094	.3148	3.1775	.6614	1.0001	1.0000	1.0000
22	.7760	2.0192	1.0000	.9184	.3405	2.9370	.7059	1.0001	1.0000	1.0000
23	1.0452	2.2167	1.0000	.9267	.3686	2.7134	.7449	1.0001	1.0000	1.0000
24	1.2941	2.4089	1.0000	.9335	.3987	2.5083	.7783	1.0001	1.0000	1.0000
25	1.5431	2.6041	1.0000	.9397	.4320	2.3154	.8084	1.0001	1.0000	1.0000
26	1.7970	2.8261	1.0000	.9461	.4729	2.1148	.8384	1.0001	1.0000	1.0000
27	2.0333	3.0334	1.0000	.9523	.5138	1.9465	.8634	1.0001	1.0000	1.0000
28	2.3127	3.2762	1.0000	.9564	.5668	1.7646	.8878	1.0001	1.0000	1.0000
29	2.5387	3.4759	1.0000	.9621	.6117	1.6350	.9067	1.0001	1.0000	1.0000
30	3.0442	3.9137	1.0000	.9679	.7233	1.3828	.9389	1.0001	1.0000	1.0000
31	3.5877	4.2708	1.0000	.9723	.8235	1.2144	.9601	1.0001	1.0000	1.0000
32	4.0881	4.4982	.9999	.9779	.8891	1.1249	.9733	1.0001	1.0000	1.0000
33	4.5961	4.6372	.9999	.9818	.9300	1.0753	.9810	1.0001	1.0000	1.0000
34	5.0762	4.7384	.9999	.9868	.9585	1.0434	.9874	1.0000	1.0000	1.0000
35	5.6121	4.8141	.9999	.9903	.9802	1.0202	.9920	1.0000	1.0000	1.0000
* 36	6.0998	4.8622	.9999	.9932	.9935	1.0066	.9952	1.0000	1.0000	1.0000
37	6.6332	4.8929	.9999	.9968	1.0002	.9998	.9981	1.0000	1.0000	1.0000
** 38	7.1361	4.9018	.9998	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
39	7.6390	4.9034	.9998	.9998	1.0007	.9993	1.0000	1.0000	1.0000	1.0000
40	8.1343	4.8975	.9998	1.0009	.9976	1.0023	1.0003	1.0000	1.0000	1.0000
41	8.6144	4.8963	1.0013	1.0027	.9969	1.0046	1.0011	1.0010	1.0004	1.0000
42	9.1707	4.8883	1.0107	1.0040	1.0022	1.0086	1.0015	1.0077	1.0031	.9997
43	9.6710	4.8866	1.0128	1.0049	1.0029	1.0100	1.0019	1.0092	1.0037	.9996
44	10.1841	4.8963	1.0013	1.0049	.9947	1.0067	1.0022	1.0010	1.0004	1.0000



TABLE 5 NOL BOUNDARY LAYER CHANNEL PROFILE DATA  
RUN NO 1271

STA = 2.210E+00 M ME = 4.795E+00 MPW = 4.806E+00 DELP = 7.656E+00 CM  
 PO = 1.026E+05 N/M2 OE = 1.400E-02 KG/M3 DPW = 1.385E-02 KG/M3 DSTRP = 2.885E+00 CM  
 TO = 3.523E+02 DEG.K TE = 6.293E+01 DEG.K TPW = 6.266E+01 DEG.K THP = 3.600E-01 CM  
 PSW = 2.437E+02 N/M2 UE = 7.625E+02 M/S UPW = 7.629E+02 M/S THEP = 6.495E-01 CM  
 TW = 2.914E+02 DEG.K RE = 2.541E+06 1/M RPW = 2.527E+06 1/M THMP = 2.165E-01 CM

N	Y (CM)	M	PS/PSW	IT/TTE	D/DE	T/TE	U/UE	DP/DPE	TP/TPE	UP/UPE
1	0.0000	0.0000	1.0000	.8272	.2127	4.6311	0.0000	.9892	.9957	1.0005
2	.0063	.0450	1.0000	.8270	.2128	4.6282	.0202	.9892	.9957	1.0005
3	.0140	.0864	1.0000	.8231	.2141	4.6011	.0386	.9892	.9957	1.0005
4	.0191	.1094	1.0000	.8235	.2141	4.5996	.0489	.9892	.9957	1.0005
5	.0241	.1340	1.0000	.8258	.2138	4.6068	.0600	.9892	.9957	1.0005
6	.0216	.1414	1.0000	.8241	.2143	4.5954	.0632	.9892	.9957	1.0005
7	.0343	.1929	1.0000	.8240	.2151	4.5793	.0861	.9892	.9957	1.0005
8	.0419	.2320	1.0000	.8262	.2152	4.5763	.1035	.9892	.9957	1.0005
9	.0495	.2768	1.0000	.8298	.2153	4.5757	.1235	.9892	.9957	1.0005
10	.0546	.3178	1.0000	.8283	.2167	4.5455	.1413	.9892	.9957	1.0005
11	.0622	.3699	1.0000	.8271	.2185	4.5075	.1638	.9892	.9957	1.0005
12	.0876	.5799	1.0000	.8344	.2250	4.3772	.2530	.9892	.9957	1.0005
13	.1156	.7722	1.0000	.8425	.2337	4.2143	.3306	.9892	.9957	1.0005
14	.1384	.9084	1.0000	.8539	.2400	4.1036	.3837	.9892	.9957	1.0005
15	.1664	1.0493	1.0000	.8568	.2506	3.9309	.4339	.9892	.9957	1.0005
16	.1918	1.1529	1.0000	.8610	.2586	3.8083	.4692	.9892	.9957	1.0005
17	.2172	1.2386	1.0000	.8646	.2659	3.7038	.4971	.9892	.9957	1.0005
18	.2375	1.2779	1.0000	.8686	.2687	3.6655	.5102	.9892	.9957	1.0005
19	.2682	1.3522	1.0000	.8682	.2767	3.5591	.5320	.9892	.9957	1.0005
20	.5375	1.6661	1.0000	.8770	.3120	3.1572	.6174	.9892	.9957	1.0005
21	.7816	1.8286	1.0000	.8844	.3320	2.9670	.6569	.9892	.9957	1.0005
22	1.0457	1.9753	1.0000	.8884	.3525	2.7939	.6885	.9892	.9957	1.0005
23	1.2847	2.1052	1.0000	.8899	.3729	2.6413	.7135	.9892	.9957	1.0005
24	1.5438	2.2470	1.0000	.8932	.3958	2.4882	.7392	.9892	.9957	1.0005
25	1.7930	2.3954	1.0000	.8986	.4205	2.3424	.7646	.9892	.9957	1.0005
26	2.0394	2.5415	1.0000	.9055	.4453	2.2120	.7883	.9892	.9957	1.0005
27	2.3165	2.7095	1.0000	.9137	.4753	2.0724	.8134	.9892	.9957	1.0005
28	2.5502	2.8517	1.0000	.9178	.5034	1.9564	.8318	.9892	.9957	1.0005
29	3.0737	3.2007	1.0000	.9288	.5775	1.7056	.8717	.9892	.9957	1.0005
30	3.5667	3.5501	1.0000	.9373	.6555	1.5026	.9025	.9892	.9957	1.0005
31	4.1079	3.8988	1.0010	.9456	.7524	1.3103	.9307	.9899	.9960	1.0004
32	4.6060	4.1788	1.0019	.9543	.8298	1.1893	.9504	.9906	.9962	1.0004
33	5.0863	4.3786	1.0028	.9613	.8872	1.1133	.9635	.9912	.9965	1.0004
34	5.6098	4.5441	1.0038	.9687	.9351	1.0573	.9744	.9919	.9968	1.0004
35	6.1105	4.6462	1.0047	.9755	.9635	1.0271	.9820	.9926	.9970	1.0003
36	6.6340	4.7210	1.0057	.9817	.9836	1.0070	.9880	.9932	.9973	1.0003
37	7.1270	4.7709	1.0066	.9875	.9957	.9958	.9929	.9939	.9975	1.0003
38	7.6556	4.8013	1.0076	.9908	1.0038	.9887	.9956	.9946	.9978	1.0002
39	8.1308	4.7967	1.0133	.9964	1.0022	.9958	.9982	.9986	.9994	1.0001
40	8.6873	4.7951	1.0153	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
41	9.1651	4.7948	1.0156	1.0038	.9964	1.0039	1.0019	1.0002	1.0001	1.0000
42	9.6556	4.7949	1.0154	1.0052	.9948	1.0053	1.0026	1.0001	1.0000	1.0000
43	10.1410	4.7946	1.0157	1.0051	.9952	1.0052	1.0025	1.0003	1.0001	1.0000

TABLE 5 NOL BOUNDARY LAYER CHANNEL PROFILE DATA  
RUN NO 901304

STA = 1.448E+00 M ME = 4.807E+00 MPW = 4.837E+00 DELP = 5.789E+00 CM  
 PO = 1.031E+06 N/M2 DE = 1.134E-01 KG/M3 DPW = 1.124E-01 KG/M3 DSTRP = 1.769E+00 CM  
 TO = 4.153E+02 DEG.K TE = 7.389E+01 DEG.K TPW = 7.363E+01 DEG.K THP = 2.433E-01 CM  
 PSW = 2.361E+03 N/M2 UE = 8.282E+02 M/S UPW = 8.286E+02 M/S THEP = 4.483E-01 CM  
 TW = 3.033E+02 DEG.K RE = 1.868E+07 1/M RPW = 1.859E+07 1/M THHP = 1.584E-01 CM

N	Y(CM)	M	PS/PSW	IT/TTE	D/DE	T/TE	U/UE	DP/UPE	TP/TPE	UP/UPE
1	0.0000	0.0000	1.0000	.7303	.2407	4.1049	0.0000	.9913	.9965	1.0004
2	.0063	.2515	1.0000	.7348	.2422	4.0787	.1057	.9913	.9965	1.0004
3	.0099	.3398	1.0000	.7380	.2436	4.0548	.1424	.9913	.9965	1.0004
4	.0203	.6310	1.0000	.7523	.2522	3.9169	.2598	.9913	.9965	1.0004
5	.0272	.7748	1.0000	.7615	.2585	3.8215	.3151	.9913	.9965	1.0004
6	.0361	.9447	1.0000	.7738	.2677	3.6907	.3776	.9913	.9965	1.0004
7	.0378	1.0300	1.0000	.7807	.2729	3.6200	.4077	.9913	.9965	1.0004
8	.0465	1.1844	1.0000	.7938	.2835	3.4842	.4599	.9913	.9965	1.0004
9	.0518	1.2612	1.0000	.8005	.2894	3.4138	.4848	.9913	.9965	1.0004
10	.0658	1.3651	1.0000	.8096	.2980	3.3151	.5171	.9913	.9965	1.0004
11	.0902	1.5078	1.0000	.8226	.3108	3.1785	.5593	.9913	.9965	1.0004
12	.1321	1.6283	1.0000	.8333	.3227	3.0609	.5927	.9913	.9965	1.0004
13	.1773	1.7007	1.0000	.8349	.3323	2.9729	.6101	.9913	.9965	1.0004
14	.2296	1.7974	1.0000	.8397	.3445	2.8674	.6332	.9913	.9965	1.0004
15	.2769	1.8571	1.0000	.8433	.3522	2.8051	.6471	.9913	.9965	1.0004
16	.3523	1.9673	1.0000	.8503	.3667	2.6942	.6718	.9913	.9965	1.0004
17	.4577	2.0990	1.0000	.8592	.3848	2.5672	.6997	.9913	.9965	1.0004
18	.5382	2.1925	1.0000	.8643	.3988	2.4769	.7179	.9913	.9965	1.0004
19	.6452	2.3162	1.0000	.8725	.4176	2.3657	.7412	.9913	.9965	1.0004
20	.7290	2.4102	1.0000	.8776	.4329	2.2818	.7574	.9913	.9965	1.0004
21	.8311	2.5243	1.0000	.8846	.4519	2.1862	.7765	.9913	.9965	1.0004
22	.9167	2.6108	1.0000	.8896	.4669	2.1159	.7901	.9913	.9965	1.0004
23	1.0084	2.7137	1.0000	.8949	.4856	2.0343	.8052	.9913	.9965	1.0004
24	1.1473	2.8571	1.0000	.9023	.5128	1.9264	.8250	.9913	.9965	1.0004
25	1.2456	2.9488	1.0000	.9076	.5304	1.8625	.8372	.9913	.9965	1.0004
26	1.3442	3.0548	1.0000	.9131	.5517	1.7906	.8504	.9913	.9965	1.0004
27	1.5903	3.2856	1.0000	.9242	.6007	1.6444	.8766	.9913	.9965	1.0004
28	1.7772	3.4460	1.0000	.9311	.6371	1.5507	.8927	.9913	.9965	1.0004
29	1.9152	3.5550	1.0000	.9349	.6631	1.4897	.9027	.9913	.9965	1.0004
30	2.1318	3.6975	1.0000	.9408	.6976	1.4161	.9154	.9913	.9965	1.0004
31	2.3581	3.8539	1.0000	.9466	.7372	1.3400	.9281	.9913	.9965	1.0004
32	2.6040	4.0042	1.0000	.9529	.7759	1.2732	.9400	.9913	.9965	1.0004
33	2.8285	4.1133	1.0000	.9578	.8045	1.2280	.9483	.9913	.9965	1.0004
34	3.1608	4.2487	1.0000	.9639	.8406	1.1751	.9582	.9913	.9965	1.0004
35	3.5126	4.3516	1.0000	.9704	.8671	1.1393	.9663	.9913	.9965	1.0004
36	3.8727	4.4467	1.0000	.9753	.8928	1.1064	.9731	.9913	.9965	1.0004
37	4.2451	4.5181	1.0000	.9799	.9116	1.0837	.9785	.9913	.9965	1.0004
38	4.6081	4.5910	1.0000	.9845	.9310	1.0611	.9839	.9913	.9965	1.0004
39	4.9901	4.6786	1.0000	.9896	.9551	1.0343	.9899	.9913	.9965	1.0004
40	5.3685	4.7336	1.0000	.9938	.9694	1.0190	.9941	.9913	.9965	1.0004
41	5.7887	4.7751	1.0000	.9968	.9804	1.0076	.9972	.9913	.9965	1.0004
42	6.1405	4.7861	1.0060	.9986	.9882	1.0057	.9986	.9956	.9982	1.0002
43	6.5029	4.8067	1.0123	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
44	6.8179	4.8239	1.0177	1.0018	1.0094	.9959	1.0015	1.0038	1.0015	.9998
45	7.2019	4.8180	1.0243	1.0028	1.0129	.9989	1.0018	1.0085	1.0034	.9996
46	7.5367	4.8156	1.0274	1.0036	1.0144	1.0005	1.0021	1.0106	1.0042	.9995
47	7.9258	4.8026	1.0434	1.0039	1.0253	1.0053	1.0018	1.0219	1.0087	.9991
48	8.3718	4.7850	1.0658	1.0043	1.0406	1.0118	1.0013	1.0375	1.0144	.9984
49	8.6627	4.7683	1.0872	1.0040	1.0558	1.0173	1.0006	1.0523	1.0206	.9978
50	8.9438	4.7674	1.0885	1.0044	1.0563	1.0180	1.0007	1.0532	1.0210	.9977

TABLE 5 NOL BOUNDARY LAYER CHANNEL PROFILE DATA  
RUN NO 901305

STA = 1.448E+00 M ME = 4.823E+00 MPW = 4.959E+00 DELP = 5.775E+00 CM  
 PO = 5.165E+05 N/M2 DE = 5.728E-02 KG/M3 DPW = 5.137E-02 KG/M3 DSTRP = 1.793E+00 CM  
 TO = 4.137E+02 DEG.K TE = 7.319E+01 DEG.K TPW = 7.007E+01 DEG.K THP = 2.619E-01 CM  
 PSW = 1.024E+03 N/M2 UE = 8.271E+02 M/S UPW = 8.309E+02 M/S THHP = 4.819E-01 CM  
 TW = 2.984E+02 DEG.K RE = 9.522E+06 1/M RPW = 9.002E+06 1/M THHP = 2.025E-01 CM

N	Y (CM)	M	PS/PSW	IT/TTE	D/DE	T/TE	U/UE	DP/DPE	TP/TPE	UP/UPE
1	0.0000	0.0000	1.0000	.7214	.2106	4.0774	0.0000	.8968	.9574	1.0046
2	.0063	.1742	1.0000	.7236	.2112	4.0648	.0728	.8968	.9574	1.0046
3	.0099	.2427	1.0000	.7251	.2120	4.0507	.1013	.8968	.9574	1.0046
4	.0168	.3616	1.0000	.7286	.2140	4.0129	.1502	.8968	.9574	1.0046
5	.0203	.4472	1.0000	.7319	.2159	3.9773	.1849	.8968	.9574	1.0046
6	.0325	.6825	1.0000	.7440	.2232	3.8466	.2775	.8968	.9574	1.0046
7	.0429	.8521	1.0000	.7552	.2304	3.7270	.3411	.8968	.9574	1.0046
8	.0762	1.3269	1.0000	.7934	.2589	3.3162	.5010	.8968	.9574	1.0046
9	.0970	1.4814	1.0000	.8070	.2709	3.1698	.5469	.8968	.9574	1.0046
10	.1110	1.5516	1.0000	.8132	.2768	3.1024	.5667	.8968	.9574	1.0046
11	.1720	1.7007	1.0000	.8264	.2902	2.9589	.6066	.8968	.9574	1.0046
12	.1999	1.7645	1.0000	.8279	.2978	2.8836	.6213	.8968	.9574	1.0046
13	.2454	1.8295	1.0000	.8289	.3059	2.8064	.6355	.8968	.9574	1.0046
14	.3012	1.9030	1.0000	.8315	.3150	2.7254	.6514	.8968	.9574	1.0046
15	.3586	1.9758	1.0000	.8349	.3240	2.6500	.6669	.8968	.9574	1.0046
16	.4079	2.0457	1.0000	.8363	.3337	2.5731	.6804	.8968	.9574	1.0046
17	.4968	2.1480	1.0000	.8409	.3473	2.4719	.7002	.8968	.9574	1.0046
18	.5593	2.2150	1.0005	.8449	.3564	2.4102	.7130	.8971	.9575	1.0045
19	.6350	2.3069	1.0011	.8501	.3693	2.3274	.7297	.8975	.9577	1.0045
20	.7353	2.4085	1.0020	.8566	.3839	2.2411	.7476	.8981	.9579	1.0045
21	.8407	2.5212	1.0029	.8652	.4000	2.1528	.7670	.8987	.9582	1.0045
22	.9131	2.5955	1.0036	.8704	.4112	2.0957	.7791	.8991	.9584	1.0045
23	1.0084	2.7039	1.0044	.8774	.4282	2.0141	.7957	.8997	.9586	1.0044
24	1.1260	2.8106	1.0055	.8830	.4463	1.9345	.8105	.9003	.9589	1.0044
25	1.1948	2.8928	1.0061	.8865	.4590	1.8822	.8200	.9007	.9590	1.0044
26	1.2913	2.9865	1.0069	.8921	.4773	1.8112	.8334	.9013	.9593	1.0044
27	1.4981	3.1828	1.0088	.9020	.5141	1.6847	.8566	.9024	.9598	1.0043
28	1.6360	3.3050	1.0110	.9076	.5389	1.6108	.8697	.9039	.9604	1.0042
29	1.7935	3.4493	1.0138	.9146	.5691	1.5295	.8845	.9056	.9611	1.0042
30	1.9708	3.6052	1.0169	.9209	.6038	1.4460	.8989	.9076	.9620	1.0041
31	2.1775	3.7653	1.0206	.9271	.6414	1.3662	.9125	.9100	.9630	1.0040
32	2.3939	3.9172	1.0244	.9336	.6782	1.2968	.9249	.9124	.9640	1.0038
33	2.6005	4.0695	1.0287	.9394	.7174	1.2312	.9363	.9151	.9651	1.0037
34	2.8837	4.2332	1.0366	.9454	.7636	1.1657	.9477	.9202	.9673	1.0035
35	3.0792	4.3210	1.0421	.9485	.7902	1.1323	.9534	.9237	.9687	1.0033
36	3.3820	4.4344	1.0506	.9553	.8241	1.0946	.9620	.9290	.9710	1.0031
37	3.7043	4.5213	1.0597	.9621	.8514	1.0686	.9691	.9347	.9734	1.0028
38	4.0795	4.6155	1.0702	.9692	.8824	1.0414	.9766	.9413	.9761	1.0026
39	4.4232	4.6570	1.0798	.9760	.8971	1.0335	.9817	.9474	.9786	1.0023
40	4.7478	4.7064	1.0908	.9815	.9168	1.0216	.9863	.9543	.9815	1.0020
41	5.0917	4.7526	1.1041	.9852	.9393	1.0042	.9900	.9626	.9849	1.0016
42	5.4237	4.7854	1.1170	.9893	.9570	1.0021	.9933	.9706	.9881	1.0013
43	5.7755	4.8032	1.1306	.9934	.9707	1.0001	.9960	.9790	.9915	1.0009
44	6.1077	4.8160	1.1434	.9969	.9825	.9992	.9982	.9869	.9948	1.0006
45	6.3617	4.8227	1.1533	.9986	.9915	.9986	.9993	.9930	.9972	1.0003
46	6.6568	4.8228	1.1647	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
47	6.9423	4.8178	1.1757	1.0015	1.0063	1.0032	1.0005	1.0068	1.0027	.9997
48	7.2182	4.8166	1.1864	1.0024	1.0140	1.0046	1.0010	1.0133	1.0053	.9994
49	7.5037	4.8073	1.1996	1.0028	1.0217	1.0081	1.0008	1.0213	1.0085	.9991
50	7.7381	4.8042	1.2040	1.0034	1.0237	1.0098	1.0010	1.0240	1.0095	.9990
51	8.0000	4.7936	1.2194	1.0039	1.0326	1.0140	1.0009	1.0333	1.0132	.9986
52	8.2326	4.7876	1.2283	1.0039	1.0380	1.0161	1.0006	1.0387	1.0153	.9984
53	8.4264	4.7861	1.2305	1.0051	1.0380	1.0178	1.0012	1.0400	1.0158	.9983
54	8.6787	4.7801	1.2394	1.0060	1.0425	1.0208	1.0014	1.0454	1.0179	.9981
55	8.9210	4.7801	1.2394	1.0051	1.0434	1.0199	1.0009	1.0454	1.0179	.9981

TABLE 5 NOL BOUNDARY LAYER CHANNEL PROFILE DATA  
RUN NO 901306

STA = 1.448E+00 M ME = 4.775E+00 MPW = 4.822E+00 DELP = 7.242E+00 CM  
 PO = 1.001E+05 N/M2 DE = 1.206E-02 KG/M3 DPW = 1.157E-02 KG/M3 DSTRP = 2.341E+00 CM  
 TO = 4.151E+02 DEG.K TE = 7.468E+01 DEG.K TPW = 7.343E+01 DEG.K THP = 3.784E-01 CM  
 PSW = 2.335E+02 N/M2 UE = 8.270E+02 M/S Upw = 8.285E+02 M/S THEP = 6.900E-01 CM  
 TW = 2.979E+02 DEG.K RE = 1.962E+06 1/M RPW = 1.920E+06 1/M THMP = 3.229E-01 CM

N	Y(CM)	M	PS/PSW	IT/TE	D/DE	T/TE	U/UE	DP/DPE	TP/TPE	UP/UPE
1	0.0000	0.0000	1.0000	.7176	.2365	3.9897	0.0000	.9594	.9835	1.0018
2	.0063	.0132	1.0000	.7180	.2364	3.9917	.0055	.9594	.9835	1.0018
3	.0099	.0259	1.0000	.7179	.2364	3.9906	.0108	.9594	.9835	1.0018
4	.0150	.0492	1.0000	.7186	.2363	3.9932	.0206	.9594	.9835	1.0018
5	.0239	.0777	1.0000	.7197	.2361	3.9966	.0325	.9594	.9835	1.0018
6	.0272	.1151	1.0000	.7226	.2355	4.0069	.0483	.9594	.9835	1.0018
7	.0447	.2155	1.0000	.7275	.2355	4.0075	.0903	.9594	.9835	1.0018
8	.0500	.2820	1.0000	.7313	.2358	4.0019	.1181	.9594	.9835	1.0018
9	.0622	.4034	1.0000	.7381	.2374	3.9743	.1684	.9594	.9835	1.0018
10	.0848	.5951	1.0000	.7513	.2419	3.9004	.2461	.9594	.9835	1.0018
11	.1041	.7643	1.0000	.7641	.2481	3.8036	.3122	.9594	.9835	1.0018
12	.1321	.9597	1.0000	.7792	.2579	3.6585	.3844	.9594	.9835	1.0018
13	.1704	1.1354	1.0000	.7908	.2699	3.4955	.4446	.9594	.9835	1.0018
14	.2210	1.3629	1.0000	.8049	.2892	3.2627	.5156	.9594	.9835	1.0018
15	.2837	1.5134	1.0000	.8143	.3039	3.1049	.5585	.9594	.9835	1.0018
16	.3338	1.6102	1.0000	.8175	.3153	2.9931	.5834	.9594	.9835	1.0018
17	.3945	1.7313	1.0000	.8237	.3296	2.8630	.6135	.9594	.9835	1.0018
18	.4521	1.7905	1.0000	.8256	.3374	2.7967	.6271	.9594	.9835	1.0018
19	.5065	1.8567	1.0000	.8280	.3463	2.7246	.6419	.9594	.9835	1.0018
20	.5674	1.9209	1.0000	.8283	.3561	2.6496	.6548	.9594	.9835	1.0018
21	.6693	2.0115	1.0000	.8293	.3703	2.5483	.6725	.9594	.9835	1.0018
22	.7384	2.0741	1.0000	.8302	.3803	2.4810	.6842	.9594	.9835	1.0018
23	.7894	2.1142	1.0000	.8311	.3868	2.4396	.6916	.9594	.9835	1.0018
24	.8552	2.1757	1.0000	.8314	.3974	2.3743	.7021	.9594	.9835	1.0018
25	.9210	2.2250	1.0000	.8337	.4051	2.3290	.7112	.9594	.9835	1.0018
26	.9784	2.2780	1.0000	.8359	.4138	2.2805	.7205	.9594	.9835	1.0018
27	1.0439	2.3322	1.0001	.8384	.4227	2.2325	.7298	.9594	.9836	1.0018
28	1.1339	2.4022	1.0005	.8412	.4348	2.1710	.7413	.9597	.9837	1.0018
29	1.1946	2.4494	1.0007	.8433	.4431	2.1312	.7489	.9598	.9837	1.0018
30	1.2664	2.5021	1.0010	.8456	.4524	2.0875	.7571	.9600	.9838	1.0018
31	1.3551	2.5754	1.0013	.8481	.4662	2.0268	.7679	.9603	.9839	1.0018
32	1.4831	2.6692	1.0018	.8516	.4841	1.9525	.7811	.9606	.9841	1.0017
33	1.6012	2.7613	1.0023	.8542	.5029	1.8808	.7931	.9609	.9842	1.0017
34	1.7292	2.8526	1.0028	.8596	.5202	1.8187	.8057	.9613	.9843	1.0017
35	1.8672	2.9513	1.0034	.8647	.5400	1.7532	.8184	.9617	.9845	1.0017
36	2.1526	3.1506	1.0045	.8750	.5816	1.6296	.8423	.9624	.9848	1.0017
37	2.4577	3.3660	1.0057	.8852	.6298	1.5068	.8653	.9633	.9851	1.0016
38	2.8100	3.5988	1.0071	.8970	.6841	1.3891	.8883	.9642	.9855	1.0016
39	3.1521	3.8064	1.0084	.9071	.7354	1.2938	.9068	.9651	.9859	1.0015
40	3.5136	3.9856	1.0098	.9159	.7816	1.2191	.9216	.9661	.9863	1.0015
41	3.8260	4.1243	1.0111	.9240	.8175	1.1669	.9331	.9669	.9866	1.0015
42	4.1793	4.2582	1.0134	.9333	.8525	1.1216	.9445	.9685	.9873	1.0014
43	4.4943	4.3317	1.0171	.9414	.8714	1.1013	.9520	.9710	.9883	1.0013
44	4.7711	4.4150	1.0204	.9488	.8941	1.0768	.9595	.9733	.9892	1.0012
45	5.0863	4.4901	1.0241	.9559	.9150	1.0561	.9664	.9758	.9903	1.0011
46	5.4186	4.5455	1.0280	.9617	.9311	1.0417	.9716	.9785	.9913	1.0010
47	5.7409	4.5976	1.0321	.9681	.9459	1.0296	.9770	.9813	.9925	1.0008
48	6.0536	4.6356	1.0364	.9754	.9553	1.0216	.9823	.9841	.9936	1.0007
49	6.3667	4.6700	1.0404	.9827	.9634	1.0190	.9873	.9869	.9947	1.0006
50	6.6418	4.7060	1.0444	.9879	.9741	1.0116	.9913	.9896	.9958	1.0005
51	6.9472	4.7335	1.0485	.9926	.9827	1.0068	.9948	.9924	.9970	1.0003
52	7.2423	4.7484	1.0526	.9958	.9884	1.0048	.9969	.9951	.9980	1.0002
53	7.4788	4.7680	1.0558	.9980	.9960	1.0003	.9987	.9973	.9989	1.0001
54	7.7719	4.7747	1.0598	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
55	8.0917	4.7698	1.0661	1.0020	1.0023	1.0036	1.0008	1.0042	1.0017	.9998
56	8.3825	4.7633	1.0745	1.0033	1.0066	1.0072	1.0012	1.0099	1.0039	.9996
57	8.9157	4.7437	1.1001	1.0042	1.0227	1.0149	1.0009	1.0270	1.0107	.9988

TABLE 5 NOL BOUNDARY LAYER CHANNEL PROFILE DATA  
RUN NO 901313

STA = 1.702E+00 M ME = 4.885E+00 MPW = 4.889E+00 DELP = 6.498E+00 CM  
 PO = 1.034E+06 N/M2 DE = 1.082E-01 KG/M3 DPW = 1.076E-01 KG/M3 DSTRP = 1.914E+00 CM  
 TO = 4.196E+02 DEG.K TE = 7.268E+01 DEG.K TPW = 7.254E+01 DEG.K THP = 2.627E-01 CM  
 PSW = 2.226E+03 N/M2 UE = 8.349E+02 M/S UPW = 8.350E+02 M/S THEP = 4.831E-01 CM  
 TM = 3.027E+02 DEG.K RE = 1.829E+07 1/M RPW = 1.825E+07 1/M THMP = 1.794E-01 CM

N	Y(CM)	M	PS/PSW	T/TTE	D/DE	T/TE	U/UE	DP/DPE	TP/TPE	UP/UPE
1	0.0000	0.0000	1.0000	.7213	.2385	4.1640	0.0000	.9951	.9980	1.0002
2	.0063	.2444	1.0000	.7261	.2398	4.1424	.1018	.9951	.9980	1.0002
3	.0063	.2664	1.0000	.7268	.2400	4.1373	.1109	.9951	.9980	1.0002
4	.0203	.6438	1.0000	.7453	.2500	3.9731	.2627	.9951	.9980	1.0002
5	.0203	.6695	1.0000	.7467	.2510	3.9560	.2726	.9951	.9980	1.0002
6	.0290	.8806	1.0000	.7619	.2608	3.8078	.3518	.9951	.9980	1.0002
7	.0465	1.2038	1.0000	.7878	.2817	3.5260	.4627	.9951	.9980	1.0002
8	.0605	1.3162	1.0000	.7976	.2904	3.4198	.4983	.9951	.9980	1.0002
9	.0884	1.4546	1.0000	.8110	.3019	3.2897	.5401	.9951	.9980	1.0002
10	.1128	1.5310	1.0000	.8178	.3090	3.2141	.5619	.9951	.9980	1.0002
11	.1407	1.5914	1.0000	.8227	.3150	3.1527	.5784	.9951	.9980	1.0002
12	.2156	1.7140	1.0000	.8288	.3295	3.0137	.6091	.9951	.9980	1.0002
13	.2891	1.8075	1.0000	.8348	.3407	2.9147	.6317	.9951	.9980	1.0002
14	.3774	1.9180	1.0000	.8418	.3547	2.7997	.6570	.9951	.9980	1.0002
15	.4773	2.0279	1.0000	.8482	.3697	2.6866	.6804	.9951	.9980	1.0002
16	.5888	2.1504	1.0000	.8560	.3868	2.5673	.7053	.9951	.9980	1.0002
17	.6782	2.2537	1.0000	.8622	.4022	2.4691	.7249	.9951	.9980	1.0002
18	.7770	2.3524	1.0000	.8685	.4173	2.3799	.7429	.9951	.9980	1.0002
19	.8595	2.4437	1.0000	.8738	.4320	2.2987	.7584	.9951	.9980	1.0002
20	.9571	2.5482	1.0000	.8799	.4494	2.2097	.7754	.9951	.9980	1.0002
21	1.0973	2.6895	1.0000	.8880	.4740	2.0952	.7969	.9951	.9980	1.0002
22	1.1676	2.7635	1.0000	.8919	.4875	2.0373	.8074	.9951	.9980	1.0002
23	1.2710	2.8767	1.0000	.8979	.5087	1.9523	.8228	.9951	.9980	1.0002
24	1.3980	2.9941	1.0000	.9044	.5313	1.8694	.8380	.9951	.9980	1.0002
25	1.5349	3.1232	1.0000	.9106	.5575	1.7815	.8533	.9951	.9980	1.0002
26	1.6520	3.2367	1.0000	.9159	.5814	1.7081	.8660	.9951	.9980	1.0002
27	1.7595	3.3465	1.0000	.9208	.6053	1.6408	.8775	.9951	.9980	1.0002
28	1.8964	3.4551	1.0000	.9256	.6296	1.5773	.8883	.9951	.9980	1.0002
29	2.1895	3.6924	1.0000	.9356	.6853	1.4492	.9099	.9951	.9980	1.0002
30	2.4922	3.9260	1.0000	.9451	.7432	1.3364	.9291	.9951	.9980	1.0002
31	2.7562	4.0798	1.0000	.9508	.7833	1.2679	.9404	.9951	.9980	1.0002
32	3.1077	4.2478	1.0000	.9580	.8277	1.1999	.9525	.9951	.9980	1.0002
33	3.4986	4.3840	1.0000	.9644	.8640	1.1494	.9621	.9951	.9980	1.0002
34	3.9073	4.4787	1.0000	.9698	.8890	1.1171	.9690	.9951	.9980	1.0002
35	4.3017	4.5837	1.0000	.9755	.9174	1.0825	.9762	.9951	.9980	1.0002
36	4.6482	4.6503	1.0000	.9808	.9340	1.0633	.9816	.9951	.9980	1.0002
37	5.0041	4.6863	1.0000	.9847	.9421	1.0542	.9850	.9951	.9980	1.0002
38	5.3040	4.7220	1.0000	.9877	.9509	1.0445	.9879	.9951	.9980	1.0002
39	5.5367	4.7456	1.0000	.9893	.9571	1.0376	.9896	.9951	.9980	1.0002
40	5.8471	4.7691	1.0000	.9928	.9615	1.0329	.9922	.9951	.9980	1.0002
41	6.2154	4.7984	1.0000	.9949	.9692	1.0247	.9943	.9951	.9980	1.0002
* 42	6.4976	4.8158	1.0000	.9960	.9739	1.0198	.9955	.9951	.9980	1.0002
43	6.7907	4.8890	1.0030	.9989	.9986	.9976	.9996	.9972	.9989	1.0001
** 44	7.1717	4.8851	1.0069	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
45	7.5331	4.8822	1.0104	1.0008	1.0016	1.0018	1.0003	1.0025	1.0010	.9999
46	7.9002	4.8676	1.0280	1.0019	1.0130	1.0079	1.0003	1.0149	1.0059	.9994
47	8.2753	4.8503	1.0493	1.0030	1.0268	1.0149	1.0002	1.0299	1.0119	.9988
48	8.6411	4.8334	1.0707	1.0030	1.0417	1.0207	.9996	1.0449	1.0177	.9981
49	8.8910	4.8193	1.0887	1.0032	1.0539	1.0259	.9992	1.0574	1.0226	.9976

TABLE 5 NOL BOUNDARY LAYER CHANNEL PROFILE DATA  
RUN NO 901314

STA = 1.702E+00 M ME = 4.863E+00 MPW = 4.922E+00 DELP = 5.946E+00 CM  
 PO = 5.210E+05 N/M2 DE = 5.400E-02 KG/M3 DPW = 5.252E-02 KG/M3 DSTRP = 1.914E+00 CM  
 TO = 4.144E+02 DEG.K TE = 7.232E+01 DEG.K TPW = 7.152E+01 DEG.K THP = 2.747E-01 CM  
 PSW = 1.079E+03 N/M2 UE = 8.291E+02 M/S UPW = 8.301E+02 M/S THEP = 5.017E-01 CM  
 TW = 2.995E+02 DEG.K RE = 9.118E+06 1/M RPW = 8.988E+06 1/M THMP = 2.057E-01 CM

N	Y (CM)	M	PS/PSW	IT/TTE	D/DE	T/TE	U/UE	DP/DPE	TP/TPE	UP/UPE
1	0.0000	0.0000	1.0000	.7226	.2322	4.1406	0.0000	.9725	.9889	1.0012
2	.0063	.1820	1.0000	.7270	.2324	4.1384	.0761	.9725	.9889	1.0012
3	.0063	.1886	1.0000	.7272	.2324	4.1376	.0789	.9725	.9889	1.0012
4	.0117	.2675	1.0000	.7301	.2332	4.1245	.1117	.9725	.9889	1.0012
5	.0117	.2751	1.0000	.7304	.2333	4.1228	.1149	.9725	.9889	1.0012
6	.0150	.3213	1.0000	.7323	.2339	4.1113	.1340	.9725	.9889	1.0012
7	.0185	.3996	1.0000	.7361	.2353	4.0876	.1661	.9725	.9889	1.0012
8	.0257	.4996	1.0000	.7414	.2377	4.0462	.2066	.9725	.9889	1.0012
9	.0307	.6265	1.0000	.7487	.2417	3.9782	.2570	.9725	.9889	1.0012
10	.0429	.8454	1.0000	.7641	.2510	3.8306	.3402	.9725	.9889	1.0012
11	.0533	1.0205	1.0000	.7777	.2607	3.6883	.4030	.9725	.9889	1.0012
12	.0691	1.1830	1.0000	.7905	.2717	3.5393	.4576	.9725	.9889	1.0012
13	.0902	1.3522	1.0000	.8041	.2850	3.3740	.5107	.9725	.9889	1.0012
14	.1110	1.4342	1.0000	.8107	.2922	3.2916	.5350	.9725	.9889	1.0012
15	.1336	1.5123	1.0000	.8175	.2992	3.2142	.5575	.9725	.9889	1.0012
16	.1720	1.5852	1.0000	.8215	.3069	3.1330	.5770	.9725	.9889	1.0012
17	.2156	1.6621	1.0000	.8240	.3162	3.0414	.5960	.9725	.9889	1.0012
18	.2751	1.7319	1.0000	.8272	.3246	2.9626	.6130	.9725	.9889	1.0012
19	.3744	1.8537	1.0000	.8325	.3401	2.8273	.6409	.9725	.9889	1.0012
20	.4775	1.9578	1.0000	.8368	.3543	2.7143	.6632	.9725	.9889	1.0012
21	.5822	2.0636	1.0000	.8420	.3691	2.6057	.6850	.9725	.9889	1.0012
22	.6574	2.1333	1.0000	.8455	.3791	2.5364	.6986	.9725	.9889	1.0012
23	.7125	2.1927	1.0000	.8496	.3875	2.4818	.7103	.9725	.9889	1.0012
24	.7983	2.2739	1.0000	.8544	.3996	2.4068	.7254	.9725	.9889	1.0012
25	.8923	2.3714	1.0000	.8605	.4144	2.3208	.7428	.9725	.9889	1.0012
26	.9738	2.4436	1.0000	.8669	.4248	2.2640	.7560	.9725	.9889	1.0012
27	1.0673	2.5361	1.0000	.8723	.4399	2.1861	.7710	.9725	.9889	1.0012
28	1.1692	2.6265	1.0000	.8771	.4553	2.1120	.7849	.9725	.9889	1.0012
29	1.2436	2.6996	1.0000	.8808	.4683	2.0537	.7955	.9725	.9889	1.0012
30	1.3411	2.8081	1.0000	.8863	.4880	1.9707	.8106	.9725	.9889	1.0012
31	1.4681	2.9187	1.0000	.8916	.5089	1.8897	.8250	.9725	.9889	1.0012
32	1.6050	3.0352	1.0000	.8964	.5322	1.8070	.8390	.9725	.9889	1.0012
33	1.7028	3.1259	1.0000	.9004	.5506	1.7464	.8494	.9725	.9889	1.0012
34	1.8004	3.2141	1.0000	.9036	.5695	1.6887	.8588	.9725	.9889	1.0012
35	1.8687	3.2893	1.0000	.9067	.5856	1.6421	.8667	.9725	.9889	1.0012
36	1.9665	3.3680	1.0000	.9115	.6018	1.5980	.8754	.9725	.9889	1.0012
37	2.0447	3.4432	1.0000	.9148	.6184	1.5550	.8829	.9725	.9889	1.0012
38	2.2205	3.5777	1.0000	.9222	.6479	1.4843	.8963	.9725	.9889	1.0012
39	2.5232	3.8584	1.0000	.9326	.7158	1.3436	.9196	.9725	.9889	1.0012
40	2.7871	4.0425	1.0012	.9397	.7632	1.2615	.9336	.9733	.9892	1.0011
41	3.0312	4.1890	1.0024	.9455	.8024	1.2014	.9441	.9741	.9896	1.0011
42	3.2756	4.2934	1.0036	.9503	.8306	1.1619	.9516	.9750	.9899	1.0011
43	3.5296	4.4107	1.0049	.9552	.8634	1.1192	.9595	.9758	.9903	1.0010
44	3.7932	4.4970	1.0062	.9599	.8874	1.0903	.9655	.9767	.9906	1.0010
45	4.0726	4.5666	1.0075	.9646	.9064	1.0690	.9708	.9777	.9910	1.0009
46	4.2939	4.6168	1.0086	.9689	.9195	1.0549	.9750	.9784	.9913	1.0009
47	4.6500	4.6981	1.0104	.9750	.9416	1.0319	.9813	.9797	.9918	1.0009
48	4.8616	4.7322	1.0114	.9783	.9506	1.0232	.9843	.9804	.9921	1.0008
49	5.0828	4.7597	1.0125	.9818	.9572	1.0172	.9871	.9811	.9924	1.0008
50	5.3543	4.7926	1.0138	.9859	.9654	1.0099	.9904	.9821	.9928	1.0008
51	5.6744	4.8331	1.0164	.9897	.9775	.9999	.9938	.9838	.9935	1.0007
52	5.9456	4.8441	1.0206	.9932	.9818	.9997	.9959	.9867	.9947	1.0006
53	6.1686	4.8427	1.0241	.9948	.9832	1.0017	.9966	.9892	.9957	1.0005
54	6.4897	4.8412	1.0292	.9973	.9850	1.0048	.9979	.9927	.9971	1.0003
55	6.7828	4.8429	1.0338	.9988	.9885	1.0057	.9987	.9958	.9983	1.0002
56	7.1443	4.8632	1.0399	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
57	7.4861	4.8973	1.0492	1.0024	1.0182	.9909	1.0024	1.0064	1.0025	.9997
58	7.9019	4.8741	1.0605	1.0030	1.0206	.9993	1.0019	1.0141	1.0056	.9994
59	8.3348	4.8620	1.0759	1.0044	1.0296	1.0049	1.0022	1.0246	1.0098	.9990
60	8.6619	4.8500	1.0914	1.0047	1.0399	1.0093	1.0019	1.0351	1.0139	.9985

TABLE 5 NOL BOUNDARY LAYER CHANNEL PROFILE DATA  
RUN NO 901315

STA = 1.702E+00 M ME = 4.818E+00 MPW = 4.833E+00 DELP = 7.266E+00 CM  
 PO = 1.037E+05 N/M2 DE = 1.140E-02 KG/M3 DPW = 1.137E-02 KG/M3 DSTAP = 2.431E+00 CM  
 TO = 4.126E+02 DEG.K TE = 7.311E+01 DEG.K TPW = 7.304E+01 DEG.K THP = 3.851E-01 CM  
 PSW = 2.388E+02 N/M2 UE = 8.259E+02 M/S UPW = 8.259E+02 M/S THEP = 6.987E-01 CM  
 TW = 2.976E+02 DEG.K RE = 1.894E+06 1/M RPW = 1.892E+06 1/M THHP = 3.235E-01 CM

N	Y (CM)	M	PS/PSW	T/TTE	D/DE	T/TE	U/UE	DP/DPE	TP/TPE	UP/UPE
1	0.0000	0.0000	1.0000	.7213	.2448	4.0702	0.0000	.9975	.9990	1.0001
2	.0063	.0333	1.0000	.7220	.2446	4.0736	.0140	.9975	.9990	1.0001
3	.0081	.0424	1.0000	.7225	.2445	4.0759	.0178	.9975	.9990	1.0001
4	.0117	.0610	1.0000	.7237	.2442	4.0805	.0256	.9975	.9990	1.0001
5	.0203	.1220	1.0000	.7263	.2439	4.0861	.0512	.9975	.9990	1.0001
6	.0378	.2324	1.0000	.7293	.2448	4.0712	.0973	.9975	.9990	1.0001
7	.0500	.3273	1.0000	.7327	.2462	4.0476	.1367	.9975	.9990	1.0001
8	.0658	.4687	1.0000	.7402	.2491	4.0009	.1946	.9975	.9990	1.0001
9	.0762	.5562	1.0000	.7458	.2514	3.9632	.2298	.9975	.9990	1.0001
10	.0884	.6533	1.0000	.7523	.2548	3.9116	.2682	.9975	.9990	1.0001
11	.1110	.8685	1.0000	.7673	.2649	3.7621	.3496	.9975	.9990	1.0001
12	.1895	1.2604	1.0000	.7988	.2913	3.4210	.4838	.9975	.9990	1.0001
13	.2489	1.4357	1.0000	.8120	.3071	3.2446	.5367	.9975	.9990	1.0001
14	.3266	1.5799	1.0000	.8199	.3229	3.0861	.5760	.9975	.9990	1.0001
15	.3985	1.6805	1.0000	.8233	.3356	2.9691	.6010	.9975	.9990	1.0001
16	.4950	1.7761	1.0000	.8247	.3492	2.8534	.6227	.9975	.9990	1.0001
17	.5654	1.8388	1.0000	.8256	.3586	2.7793	.6362	.9975	.9990	1.0001
18	.6309	1.8811	1.0000	.8255	.3653	2.7277	.6448	.9975	.9990	1.0001
19	.7008	1.9344	1.0000	.8286	.3726	2.6743	.6565	.9975	.9990	1.0001
20	.7897	1.9974	1.0000	.8307	.3822	2.6073	.6694	.9975	.9990	1.0001
21	.8562	2.0536	1.0000	.8329	.3909	2.5494	.6805	.9975	.9990	1.0001
22	.9502	2.1183	1.0000	.8345	.4015	2.4818	.6926	.9975	.9990	1.0001
23	1.0053	2.1601	1.0000	.8362	.4083	2.4408	.7004	.9975	.9990	1.0001
24	1.0538	2.1947	1.0000	.8370	.4143	2.4056	.7065	.9975	.9990	1.0001
25	1.1699	2.2814	1.0000	.8395	.4293	2.3210	.7214	.9975	.9990	1.0001
26	1.2969	2.3803	1.0000	.8430	.4469	2.2300	.7377	.9975	.9990	1.0001
27	1.4531	2.4890	1.0000	.8475	.4666	2.1359	.7550	.9975	.9990	1.0001
28	1.5997	2.5984	1.0000	.8516	.4874	2.0446	.7711	.9975	.9990	1.0001
29	1.6779	2.6567	1.0000	.8542	.4986	1.9987	.7795	.9975	.9990	1.0001
30	1.7757	2.7231	1.0000	.8576	.5113	1.9490	.7890	.9975	.9990	1.0001
31	1.8832	2.7999	1.0000	.8617	.5263	1.8936	.7997	.9975	.9990	1.0001
32	2.0198	2.9000	1.0000	.8665	.5466	1.8230	.8127	.9975	.9990	1.0001
33	2.1372	2.9803	1.0000	.8703	.5633	1.7690	.8227	.9975	.9990	1.0001
34	2.3129	3.0998	1.0000	.8765	.5887	1.6928	.8370	.9975	.9990	1.0001
35	2.5278	3.2650	1.0000	.8838	.6258	1.5925	.8551	.9975	.9990	1.0001
36	2.8308	3.4795	1.0002	.8931	.6767	1.4730	.8764	.9977	.9991	1.0001
37	3.0945	3.6585	1.0004	.9016	.7204	1.3837	.8932	.9978	.9991	1.0001
38	3.3972	3.8501	1.0006	.9103	.7695	1.2957	.9096	.9979	.9992	1.0001
39	3.6612	4.0029	1.0007	.9177	.8097	1.2317	.9220	.9980	.9992	1.0001
40	3.8847	4.1202	1.0009	.9238	.8410	1.1860	.9313	.9981	.9993	1.0001
41	4.1829	4.2386	1.0011	.9309	.8723	1.1437	.9408	.9983	.9993	1.0001
42	4.5100	4.3570	1.0013	.9391	.9032	1.1048	.9505	.9984	.9994	1.0001
43	4.8082	4.4461	1.0015	.9463	.9258	1.0780	.9581	.9986	.9994	1.0001
44	5.0104	4.4945	1.0016	.9515	.9369	1.0653	.9628	.9987	.9995	1.0001
45	5.2812	4.5478	1.0018	.9580	.9486	1.0524	.9683	.9988	.9995	1.0001
46	5.5623	4.6076	1.0020	.9629	.9640	1.0358	.9733	.9989	.9996	1.0000
47	5.7854	4.6439	1.0021	.9673	.9720	1.0274	.9769	.9990	.9996	1.0000
48	6.0569	4.6769	1.0023	.9718	.9789	1.0204	.9805	.9991	.9997	1.0000
49	6.3185	4.7069	1.0024	.9767	.9844	1.0148	.9841	.9993	.9997	1.0000
50	6.5430	4.7363	1.0026	.9799	.9913	1.0078	.9868	.9994	.9997	1.0000
51	6.8166	4.7543	1.0028	.9843	.9932	1.0062	.9898	.9995	.9998	1.0000
52	7.0218	4.7624	1.0029	.9881	.9923	1.0072	.9920	.9996	.9998	1.0000
53	7.2659	4.7824	1.0031	.9932	.9942	1.0055	.9953	.9997	.9999	1.0000
54	7.4907	4.7965	1.0032	.9962	.9961	1.0036	.9973	.9998	.9999	1.0000
55	7.7234	4.8100	1.0033	.9985	.9985	1.0013	.9990	.9999	1.0000	1.0000
56	7.9256	4.8182	1.0035	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
57	8.1661	4.8287	1.0036	1.0023	1.0014	.9988	1.0016	1.0001	1.0000	1.0000
58	8.4257	4.8307	1.0038	1.0039	1.0007	.9996	1.0024	1.0002	1.0001	1.0000
59	8.7241	4.8267	1.0038	1.0045	1.0035	1.0016	1.0026	1.0036	1.0015	.9998
60	9.0030	4.8215	1.0149	1.0046	1.0079	1.0034	1.0024	1.0081	1.0032	.9997

TABLE 5 NOL BOUNDARY LAYER CHANNEL PROFILE DATA  
RUN NO 901295

STA = 1.905E+00 M ME = 4.919E+00 MPW = 4.916E+00 DELP = 5.593E+00 CM  
 PO = 1.032E+06 N/M2 DE = 1.057E-01 KG/M3 DPW = 1.057E-01 KG/M3 DSTRP = 1.804E+00 CM  
 TO = 4.164E+02 DEG.K TE = 7.132E+01 DEG.K TPW = 7.132E+01 DEG.K THP = 2.343E-01 CM  
 PSW = 2.151E+03 N/M2 UE = 8.327E+02 M/S UPW = 8.327E+02 M/S THEP = 4.274E-01 CM  
 TW = 3.048E+02 DEG.K RE = 1.820E+07 1/M RPW = 1.820E+07 1/M THHP = 1.518E-01 CM

N	Y (CM)	M	PS/PSW	IT/ITE	D/DE	T/TE	U/UE	OP/DPE	TP/TPE	UP/UPE
1	0.0000	0.0000	1.0000	.7319	.2340	4.2735	0.0000	1.0000	1.0000	1.0000
2	.0063	.2358	1.0000	.7363	.2352	4.2516	.0989	1.0000	1.0000	1.0000
3	.0150	.5286	1.0000	.7484	.2416	4.1383	.2186	1.0000	1.0000	1.0000
4	.0221	.6958	1.0000	.7580	.2478	4.0353	.2842	1.0000	1.0000	1.0000
5	.0429	1.0891	1.0000	.7880	.2689	3.7187	.4270	1.0000	1.0000	1.0000
6	.0762	1.3800	1.0000	.8133	.2908	3.4388	.5203	1.0000	1.0000	1.0000
7	.1146	1.5296	1.0000	.8265	.3042	3.2874	.5638	1.0000	1.0000	1.0000
8	.1615	1.6063	1.0000	.8334	.3115	3.2099	.5851	1.0000	1.0000	1.0000
9	.2802	1.7811	1.0000	.8428	.3321	3.0107	.6283	1.0000	1.0000	1.0000
10	.4442	1.9613	1.0000	.8539	.3549	2.8179	.6693	1.0000	1.0000	1.0000
11	.5862	2.1115	1.0000	.8634	.3752	2.6651	.7008	1.0000	1.0000	1.0000
12	.7234	2.2455	1.0000	.8711	.3949	2.5324	.7265	1.0000	1.0000	1.0000
13	.8578	2.3802	1.0000	.8789	.4157	2.4057	.7505	1.0000	1.0000	1.0000
14	.9736	2.4916	1.0000	.8853	.4336	2.3061	.7692	1.0000	1.0000	1.0000
15	1.1339	2.6494	1.0000	.8944	.4603	2.1724	.7939	1.0000	1.0000	1.0000
16	1.3675	2.8876	1.0000	.9067	.5039	1.9846	.8270	1.0000	1.0000	1.0000
17	1.6340	3.1400	1.0000	.9192	.5538	1.8059	.8579	1.0000	1.0000	1.0000
18	1.9289	3.4213	1.0000	.9304	.6150	1.6260	.8870	1.0000	1.0000	1.0000
19	2.2522	3.7474	1.0000	.9423	.6922	1.4447	.9157	1.0000	1.0000	1.0000
20	2.6513	4.0909	1.0000	.9538	.7806	1.2811	.9413	1.0000	1.0000	1.0000
21	3.0305	4.3213	1.0000	.9611	.8437	1.1852	.9564	1.0000	1.0000	1.0000
22	3.4569	4.5103	1.0000	.9693	.8955	1.1167	.9690	1.0000	1.0000	1.0000
23	3.9487	4.6686	1.0000	.9763	.9401	1.0637	.9789	1.0000	1.0000	1.0000
24	4.3909	4.7543	1.0000	.9833	.9616	1.0400	.9857	1.0000	1.0000	1.0000
25	4.7577	4.8247	1.0000	.9880	.9804	1.0200	.9907	1.0000	1.0000	1.0000
26	5.1732	4.8692	1.0000	.9926	.9907	1.0094	.9945	1.0000	1.0000	1.0000
* 27	5.5933	4.8968	1.0000	.9967	.9959	1.0041	.9976	1.0000	1.0000	1.0000
** 28	6.0325	4.9188	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
29	6.4793	4.9158	1.0000	1.0026	.9964	1.0036	1.0012	1.0000	1.0000	1.0000
30	6.8369	4.9103	1.0000	1.0034	.9937	1.0063	1.0014	1.0000	1.0000	1.0000
31	7.1191	4.9103	1.0000	1.0052	.9920	1.0081	1.0023	1.0000	1.0000	1.0000
32	7.4483	4.9048	1.0000	1.0054	.9900	1.0101	1.0022	1.0000	1.0000	1.0000
33	7.9187	4.8938	1.0000	1.0060	.9857	1.0145	1.0021	1.0000	1.0000	1.0000
34	8.4831	4.8637	1.0000	1.0057	.9760	1.0246	1.0009	1.0000	1.0000	1.0000
35	8.9817	4.8611	1.0000	1.0062	.9746	1.0261	1.0011	1.0000	1.0000	1.0000



TABLE 5 NOL BOUNDARY LAYER CHANNEL PROFILE DATA  
RUN NO 901296

STA = 1.905E+00 M ME = 4.938E+00 MPW = 4.937E+00 DELP = 5.948E+00 CM  
 PO = 5.209E+05 N/M2 DE = 5.192E-02 KG/M3 DPW = 5.197E-02 KG/M3 DSTRP = 1.969E+00 CM  
 TO = 4.181E+02 DEG.K TE = 7.120E+01 DEG.K TPW = 7.122E+01 DEG.K THP = 2.727E-01 CM  
 PSW = 1.060E+03 N/M2 UE = 8.349E+02 M/S UPW = 8.349E+02 M/S THEP = 4.961E-01 CM  
 TW = 3.026E+02 DEG.K RE = 8.982E+06 1/M RPW = 8.987E+06 1/M THMP = 2.004E-01 CM

N	Y (CM)	M	PS/PSW	IT/TTE	D/DE	T/TE	U/UE	DP/DPE	TP/TPE	UP/UPE
1	0.0000	0.0000	1.0000	.7237	.2356	4.2499	0.0000	1.0009	1.0003	1.0000
2	.0063	.1582	1.0000	.7267	.2358	4.2461	.0661	1.0009	1.0003	1.0000
3	.0099	.2244	1.0000	.7284	.2364	4.2347	.0935	1.0009	1.0003	1.0000
4	.0168	.3402	1.0000	.7326	.2381	4.2049	.1413	1.0009	1.0003	1.0000
5	.0429	.7654	1.0000	.7563	.2518	3.9756	.3092	1.0009	1.0003	1.0000
6	.0672	1.1103	1.0000	.7828	.2715	3.6875	.4320	1.0009	1.0003	1.0000
7	.0884	1.2980	1.0000	.7984	.2855	3.5068	.4925	1.0009	1.0003	1.0000
8	.1092	1.4158	1.0000	.8088	.2953	3.3906	.5252	1.0009	1.0003	1.0000
9	.1773	1.5657	1.0000	.8218	.3092	3.2384	.5708	1.0009	1.0003	1.0000
10	.2296	1.6591	1.0000	.8251	.3204	3.1249	.5942	1.0009	1.0003	1.0000
11	.3216	1.7629	1.0000	.8290	.3335	3.0022	.6189	1.0009	1.0003	1.0000
12	.4397	1.8843	1.0000	.8350	.3492	2.8673	.6465	1.0009	1.0003	1.0000
13	.5641	1.9980	1.0000	.8416	.3643	2.7482	.6710	1.0009	1.0003	1.0000
14	.6878	2.1100	1.0000	.8477	.3802	2.6332	.6937	1.0009	1.0003	1.0000
15	.7981	2.2088	1.0000	.8540	.3944	2.5383	.7130	1.0009	1.0003	1.0000
16	.9421	2.3367	1.0000	.8607	.4144	2.4160	.7359	1.0009	1.0003	1.0000
17	1.0389	2.4147	1.0000	.8644	.4273	2.3432	.7489	1.0009	1.0003	1.0000
18	1.2225	2.5767	1.0000	.8743	.4540	2.2054	.7753	1.0009	1.0003	1.0000
19	1.5499	2.8798	1.0000	.8915	.5084	1.9692	.8188	1.0009	1.0003	1.0000
20	1.8164	3.1267	1.0000	.9046	.5570	1.7975	.8493	1.0009	1.0003	1.0000
21	2.0828	3.3652	1.0000	.9151	.6083	1.6459	.8747	1.0009	1.0003	1.0000
22	2.3205	3.6017	1.0000	.9242	.6631	1.5099	.8967	1.0009	1.0003	1.0000
23	2.6436	3.8911	1.0000	.9343	.7351	1.3620	.9201	1.0008	1.0003	1.0000
24	2.9563	4.1249	.9999	.9421	.7967	1.2565	.9368	1.0008	1.0003	1.0000
25	3.2502	4.3120	.9998	.9498	.8469	1.1820	.9498	1.0007	1.0003	1.0000
26	3.6010	4.4804	.9997	.9566	.8935	1.1202	.9607	1.0007	1.0003	1.0000
27	3.9035	4.5928	.9996	.9626	.9240	1.0831	.9684	1.0006	1.0002	1.0000
28	4.2421	4.6874	.9995	.9684	.9493	1.0542	.9751	1.0005	1.0002	1.0000
29	4.5242	4.7331	.9994	.9732	.9596	1.0428	.9792	1.0005	1.0002	1.0000
30	4.8255	4.7989	.9994	.9789	.9758	1.0254	.9845	1.0004	1.0002	1.0000
31	5.1747	4.8436	.9993	.9837	.9859	1.0148	.9886	1.0003	1.0001	1.0000
32	5.4135	4.8675	.9992	.9862	.9913	1.0092	.9907	1.0003	1.0001	1.0000
33	5.6713	4.8853	.9991	.9891	.9943	1.0061	.9928	1.0002	1.0001	1.0000
* 34	5.9484	4.9056	.9990	.9925	.9976	1.0026	.9952	1.0002	1.0001	1.0000
35	6.2634	4.9259	.9990	.9946	1.0023	.9979	.9970	1.0001	1.0000	1.0000
36	6.5844	4.9356	.9989	.9976	1.0024	.9977	.9988	1.0001	1.0000	1.0000
** 37	6.8575	4.9358	.9988	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
38	7.1867	4.9393	.9987	1.0019	.9992	1.0007	1.0011	.9999	1.0000	1.0000
39	7.4219	4.9393	.9987	1.0027	.9984	1.0015	1.0015	.9999	1.0000	1.0000
40	7.7041	4.9393	.9987	1.0037	.9974	1.0025	1.0020	.9999	1.0000	1.0000
41	8.0427	4.9393	.9987	1.0043	.9968	1.0031	1.0023	.9999	1.0000	1.0000
42	8.3342	4.9408	.9970	1.0047	.9952	1.0030	1.0025	.9987	.9995	1.0001
43	8.5788	4.9453	.9917	1.0051	.9911	1.0019	1.0029	.9950	.9980	1.0002
44	8.9271	4.9504	.9858	1.0060	.9859	1.0011	1.0035	.9907	.9963	1.0004

TABLE 5 NOL BOUNDARY LAYER CHANNEL PROFILE DATA  
RUN NO 901297

STA = 1.905E+00 M	ME = 4.830E+00	MPW = 4.847E+00	DELP = 7.638E+00 CM
PO = 1.033E+05 N/M2	DE = 1.138E-02 KG/M3	DPW = 1.120E-02 KG/M3	DSTRP = 2.564E+00 CM
TO = 4.173E+02 DEG.K	TE = 7.365E+01 DEG.K	TPW = 7.319E+01 DEG.K	THP = 3.975E-01 CM
PSW = 2.337E+02 N/M2	UE = 8.310E+02 M/S	UPW = 8.316E+02 M/S	THEP = 7.205E-01 CM
TW = 3.030E+02 DEG.K	RE = 1.888E+06 1/M	RPW = 1.872E+06 1/M	THHP = 3.307E-01 CM

N	Y(CM)	M	PS/PSW	T/TTE	D/DE	T/TE	U/UE	DP/DPE	TP/TPE	UP/UPE
1	0.0000	0.0000	1.0000	.7260	.2378	4.1135	0.0000	.9842	.9937	1.0007
2	.0063	.0443	1.0000	.7270	.2375	4.1178	.0186	.9842	.9937	1.0007
3	.0099	.0711	1.0000	.7279	.2373	4.1206	.0299	.9842	.9937	1.0007
4	.0168	.1153	1.0000	.7294	.2373	4.1219	.0484	.9842	.9937	1.0007
5	.0272	.1758	1.0000	.7318	.2373	4.1212	.0739	.9842	.9937	1.0007
6	.0378	.2374	1.0000	.7341	.2378	4.1135	.0997	.9842	.9937	1.0007
7	.0622	.4286	1.0000	.7431	.2408	4.0616	.1788	.9842	.9937	1.0007
8	.0866	.6002	1.0000	.7515	.2462	3.9721	.2476	.9842	.9937	1.0007
9	.1110	.8122	1.0000	.7675	.2546	3.8419	.3296	.9842	.9937	1.0007
10	.1720	1.1667	1.0000	.7958	.2759	3.5446	.4547	.9842	.9937	1.0007
11	.2210	1.3119	1.0000	.8103	.2863	3.4155	.5020	.9842	.9937	1.0007
12	.3439	1.5894	1.0000	.8226	.3158	3.0968	.5790	.9842	.9937	1.0007
13	.4509	1.7410	1.0000	.8276	.3350	2.9196	.6159	.9842	.9937	1.0007
14	.5690	1.8442	1.0000	.8287	.3499	2.7949	.6383	.9842	.9937	1.0007
15	.6863	1.9342	1.0000	.8300	.3635	2.6901	.6568	.9842	.9937	1.0007
16	.8011	2.0075	1.0000	.8314	.3749	2.6084	.6712	.9842	.9937	1.0007
17	.9195	2.0672	1.0000	.8336	.3840	2.5468	.6830	.9842	.9937	1.0007
18	1.0437	2.1499	1.0000	.8374	.3967	2.4656	.6989	.9842	.9937	1.0007
19	1.2243	2.2597	1.0000	.8418	.4144	2.3598	.7186	.9842	.9937	1.0007
20	1.4549	2.4148	1.0000	.8488	.4405	2.2201	.7449	.9842	.9937	1.0007
21	1.7402	2.6268	1.0000	.8589	.4783	2.0447	.7776	.9842	.9937	1.0007
22	2.1209	2.8538	1.0000	.8685	.5224	1.8721	.8084	.9842	.9937	1.0007
23	2.4442	3.0701	1.0000	.8781	.5671	1.7245	.8347	.9842	.9937	1.0007
24	2.7193	3.2535	1.0000	.8865	.6069	1.6115	.8550	.9842	.9937	1.0007
25	2.9848	3.4611	1.0000	.8941	.6556	1.4918	.8752	.9842	.9937	1.0007
26	3.3165	3.6935	1.0000	.9031	.7126	1.3725	.8958	.9842	.9937	1.0007
27	3.6766	3.9258	1.0000	.9124	.7723	1.2664	.9146	.9842	.9937	1.0007
28	4.0444	4.1030	1.0000	.9221	.8174	1.1964	.9291	.9842	.9937	1.0007
29	4.4867	4.2912	1.0000	.9337	.8657	1.1298	.9443	.9842	.9937	1.0007
30	4.8064	4.4220	1.0000	.9416	.9002	1.0864	.9542	.9842	.9937	1.0007
31	5.1176	4.5108	1.0000	.9486	.9224	1.0603	.9616	.9842	.9937	1.0007
32	5.4613	4.5978	1.0000	.9558	.9440	1.0360	.9689	.9842	.9937	1.0007
33	5.8146	4.6602	1.0007	.9635	.9580	1.0217	.9752	.9848	.9939	1.0007
34	6.1869	4.7259	1.0020	.9702	.9745	1.0056	.9811	.9856	.9942	1.0006
35	6.4811	4.7496	1.0029	.9760	.9775	1.0034	.9850	.9863	.9945	1.0006
36	6.8102	4.7781	1.0040	.9823	.9819	1.0000	.9892	.9871	.9948	1.0006
37	7.0736	4.7915	1.0049	.9851	.9845	.9982	.9911	.9877	.9950	1.0005
38	7.3655	4.7987	1.0082	.9898	.9856	1.0005	.9937	.9900	.9960	1.0004
* 39	7.6383	4.8005	1.0117	.9929	.9863	1.0030	.9953	.9925	.9970	1.0003
40	7.9863	4.8354	1.0162	.9970	.9865	.9953	.9987	.9956	.9982	1.0002
** 41	8.2403	4.8303	1.0225	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
42	8.5788	4.8250	1.0289	1.0025	1.0019	1.0043	1.0011	1.0045	1.0018	.9998
43	8.8989	4.8224	1.0321	1.0043	1.0024	1.0070	1.0018	1.0067	1.0027	.9997

TABLE 5 NOL BOUNDARY LAYER CHANNEL PROFILE DATA  
RUN NO 901292

STA = 2.057E+00 M ME = 4.876E+00 MPW = 4.873E+00 DELP = 5.982E+00 CM  
 PO = 1.034E+06 N/M2 DE = 1.117E-01 KG/M3 OPW = 1.119E-01 KG/M3 OSTRP = 1.984E+00 CM  
 TO = 4.082E+02 DEG.K TE = 7.093E+01 DEG.K TPW = 7.097E+01 DEG.K THP = 2.438E-01 CM  
 PSW = 2.270E+03 N/M2 UE = 8.232E+02 M/S UPW = 8.231E+02 M/S THEP = 4.447E-01 CM  
 TW = 2.998E+02 DEG.K RE = 1.913E+07 1/M RPW = 1.915E+07 1/M THHP = 1.371E-01 CM

N	Y(CM)	M	PS/PSW	IT/TTE	D/DE	T/TE	U/UE	DP/DPE	TP/TPE	UP/UPE
1	0.0000	0.0000	1.0000	.7345	.2371	4.2270	0.0000	1.0016	1.0006	.9999
2	.0063	.2209	1.0000	.7430	.2367	4.2345	.0932	1.0016	1.0006	.9999
3	.0183	.5267	1.0000	.7603	.2418	4.1454	.2199	1.0016	1.0006	.9999
4	.0406	.9859	1.0000	.7948	.2617	3.8295	.3957	1.0016	1.0006	.9999
5	.0630	1.2552	1.0000	.8178	.2801	3.5788	.4870	1.0016	1.0006	.9999
6	.0886	1.4109	1.0000	.8314	.2929	3.4221	.5353	1.0016	1.0006	.9999
7	.1110	1.4919	1.0000	.8381	.3003	3.3376	.5590	1.0016	1.0006	.9999
8	.1727	1.6019	1.0000	.8472	.3111	3.2219	.5897	1.0016	1.0006	.9999
9	.2243	1.6823	1.0000	.8508	.3205	3.1268	.6101	1.0016	1.0006	.9999
10	.3574	1.8237	1.0000	.8605	.3370	2.9740	.6450	1.0016	1.0006	.9999
11	.4740	1.9386	1.0000	.8667	.3520	2.8477	.6709	1.0016	1.0006	.9999
12	.6408	2.0903	1.0000	.8754	.3728	2.6885	.7029	1.0016	1.0006	.9999
13	.8247	2.2530	1.0000	.8840	.3970	2.5246	.7342	1.0016	1.0006	.9999
14	.9820	2.3950	1.0000	.8919	.4192	2.3906	.7594	1.0016	1.0006	.9999
15	1.1374	2.5380	1.0000	.8999	.4428	2.2634	.7831	1.0016	1.0006	.9999
16	1.3505	2.7384	1.0000	.9104	.4782	2.0960	.8131	1.0016	1.0006	.9999
17	1.6822	3.0556	1.0000	.9258	.5394	1.8581	.8542	1.0016	1.0006	.9999
18	2.0234	3.3560	1.0000	.9385	.6036	1.6606	.8869	1.0016	1.0006	.9999
19	2.4404	3.7328	1.0000	.9515	.6931	1.4461	.9206	1.0016	1.0006	.9999
20	2.8384	4.0270	1.0000	.9606	.7692	1.3029	.9427	1.0016	1.0006	.9999
21	3.0754	4.1663	1.0000	.9645	.8074	1.2413	.9520	1.0016	1.0006	.9999
22	3.4262	4.3288	1.0000	.9705	.8520	1.1764	.9629	1.0016	1.0006	.9999
23	3.7010	4.4347	1.0000	.9739	.8822	1.1361	.9694	1.0016	1.0006	.9999
24	4.1133	4.5762	1.0000	.9811	.9209	1.0883	.9791	1.0016	1.0006	.9999
25	4.5242	4.6666	1.0000	.9853	.9466	1.0588	.9848	1.0016	1.0006	.9999
26	4.9256	4.7185	1.0000	.9900	.9593	1.0448	.9892	1.0016	1.0006	.9999
27	5.2662	4.7404	1.0000	.9926	.9640	1.0397	.9913	1.0016	1.0006	.9999
28	5.6388	4.7805	1.0000	.9963	.9737	1.0293	.9947	1.0016	1.0006	.9999
* 29	5.9825	4.8308	1.0000	.9995	.9875	1.0150	.9981	1.0016	1.0006	.9999
** 30	6.3167	4.8760	.9977	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
31	6.5992	4.8828	.9897	1.0011	.9931	.9988	1.0008	.9943	.9977	1.0002
32	6.9660	4.8897	.9818	1.0038	.9848	.9992	1.0024	.9885	.9954	1.0005
33	7.2672	4.8938	.9770	1.0044	.9808	.9984	1.0028	.9851	.9940	1.0006
34	7.7940	4.8938	.9770	1.0032	.9819	.9972	1.0022	.9851	.9940	1.0006
35	8.2078	4.8883	.9834	1.0037	.9860	.9995	1.0023	.9897	.9959	1.0004
36	8.8476	4.8774	.9961	1.0044	.9945	1.0039	1.0022	.9989	.9995	1.0000

TABLE 5 NOL BOUNDARY LAYER CHANNEL PROFILE DATA  
RUN NO 901293

STA = 2.057E+00 M	ME = 4.889E+00	MPW = 4.910E+00	DELP = 6.539E+00 CM
PO = 5.173E+05 N/M2	DE = 5.407E-02 KG/M3	DPW = 5.339E-02 KG/M3	DSTRP = 2.120E+00 CM
TO = 4.140E+02 DEG.K	TE = 7.161E+01 DEG.K	TPW = 7.125E+01 DEG.K	THP = 2.986E-01 CM
PSW = 1.086E+03 N/M2	UE = 8.294E+02 M/S	UPW = 8.298E+02 M/S	THEP = 5.428E-01 CM
TW = 3.002E+02 DEG.K	RE = 9.234E+06 1/M	RPW = 9.174E+06 1/M	THHP = 2.207E-01 CM

N	Y(CM)	M	PS/PSW	TT/TTE	D/DE	T/TE	U/UE	DP/DPE	TP/TPE	UP/UPE
1	0.0000	0.0000	1.0000	.7251	.2344	4.1918	0.0000	.9874	.9949	1.0005
2	.0063	.1584	1.0000	.7277	.2347	4.1858	.0663	.9874	.9949	1.0005
3	.0099	.2158	1.0000	.7288	.2353	4.1741	.0902	.9874	.9949	1.0005
4	.0201	.3663	1.0000	.7339	.2378	4.1316	.1523	.9874	.9949	1.0005
5	.0218	.4049	1.0000	.7344	.2390	4.1107	.1679	.9874	.9949	1.0005
6	.0320	.5617	1.0000	.7412	.2437	4.0303	.2306	.9874	.9949	1.0005
7	.0424	.7555	1.0000	.7532	.2514	3.9080	.3055	.9874	.9949	1.0005
8	.0663	1.0676	1.0000	.7761	.2689	3.6538	.4174	.9874	.9949	1.0005
9	.0853	1.2627	1.0000	.7921	.2829	3.4721	.4812	.9874	.9949	1.0005
10	.1077	1.3773	1.0000	.8008	.2927	3.3560	.5160	.9874	.9949	1.0005
11	.1608	1.5181	1.0000	.8134	.3052	3.2188	.5571	.9874	.9949	1.0005
12	.2225	1.6314	1.0000	.8197	.3177	3.0924	.5868	.9874	.9949	1.0005
13	.3381	1.7503	1.0000	.8260	.3318	2.9610	.6160	.9874	.9949	1.0005
14	.4465	1.8576	1.0000	.8319	.3452	2.8454	.6409	.9874	.9949	1.0005
15	.5710	1.9668	1.0000	.8386	.3594	2.7330	.6651	.9874	.9949	1.0005
16	.6726	2.0467	1.0000	.8426	.3706	2.6506	.6815	.9874	.9949	1.0005
17	.7877	2.1359	1.0000	.8459	.3842	2.5570	.6986	.9874	.9949	1.0005
18	.9047	2.2332	1.0000	.8515	.3986	2.4642	.7170	.9874	.9949	1.0005
19	1.0127	2.3195	1.0000	.8570	.4116	2.3865	.7329	.9874	.9949	1.0005
20	1.1486	2.4287	1.0000	.8634	.4290	2.2898	.7517	.9874	.9949	1.0005
21	1.2903	2.5326	1.0000	.8719	.4449	2.2081	.7697	.9874	.9949	1.0005
22	1.5745	2.7913	1.0000	.8854	.4910	2.0008	.8075	.9874	.9949	1.0005
23	1.8969	3.0646	1.0000	.8983	.5445	1.8042	.8419	.9874	.9949	1.0005
24	2.1905	3.3217	1.0000	.9111	.5981	1.6424	.8707	.9874	.9949	1.0005
25	2.5413	3.6215	1.0000	.9236	.6666	1.4736	.8992	.9874	.9949	1.0005
26	2.8255	3.8611	1.0000	.9290	.7283	1.3488	.9172	.9874	.9949	1.0005
27	3.0625	4.0021	1.0000	.9356	.7634	1.2868	.9285	.9874	.9949	1.0005
28	3.2804	4.1432	1.0000	.9427	.7991	1.2293	.9396	.9874	.9949	1.0005
29	3.5933	4.3150	1.0000	.9500	.8450	1.1626	.9516	.9874	.9949	1.0005
30	3.8763	4.4555	1.0000	.9569	.8826	1.1130	.9614	.9874	.9949	1.0005
31	4.1753	4.5660	1.0000	.9628	.9125	1.0766	.9690	.9874	.9949	1.0005
32	4.5113	4.6550	1.0000	.9692	.9352	1.0504	.9758	.9874	.9949	1.0005
33	4.7915	4.7012	1.0022	.9733	.9484	1.0380	.9797	.9889	.9955	1.0005
34	5.0719	4.7520	1.0049	.9767	.9645	1.0236	.9833	.9908	.9963	1.0004
35	5.3584	4.7632	1.0077	.9805	.9671	1.0236	.9857	.9928	.9971	1.0003
36	5.6449	4.7842	1.0106	.9848	.9726	1.0207	.9886	.9948	.9979	1.0002
37	5.9505	4.8241	1.0136	.9886	.9851	1.0107	.9920	.9969	.9988	1.0001
38	6.2367	4.8444	1.0164	.9914	.9920	1.0065	.9941	.9989	.9996	1.0000
* 39	6.5392	4.8469	1.0194	.9941	.9930	1.0084	.9955	1.0010	1.0004	1.0000
40	6.8214	4.8679	1.0192	.9974	.9966	1.0047	.9979	1.0009	1.0004	1.0000
** 41	7.1603	4.8892	1.0179	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
42	7.4988	4.8977	1.0167	1.0013	1.0004	.9984	1.0009	.9991	.9996	1.0000
43	7.7716	4.9010	1.0127	1.0015	.9974	.9975	1.0011	.9963	.9985	1.0002
44	8.0068	4.9054	1.0074	1.0023	.9928	.9969	1.0017	.9926	.9970	1.0003
45	8.2796	4.9084	1.0040	1.0030	.9897	.9965	1.0022	.9902	.9961	1.0004
46	8.5618	4.9101	1.0020	1.0038	.9876	.9967	1.0026	.9888	.9955	1.0005
47	8.9665	4.9128	.9987	1.0051	.9839	.9972	1.0034	.9865	.9946	1.0006

TABLE 5 NOL BOUNDARY LAYER CHANNEL PROFILE DATA  
RUN NO 901294

STA = 2.057E+00 M ME = 4.813E+00 MPW = 4.814E+00 DELP = 7.635E+00 CM  
 PO = 1.026E+05 N/M2 DE = 1.158E-02 KG/M3 DPW = 1.155E-02 KG/M3 DSTRP = 2.691E+00 CM  
 TO = 4.159E+02 DEG.K TE = 7.383E+01 DEG.K TPW = 7.375E+01 DEG.K THP = 4.070E-01 CM  
 PSW = 2.413E+02 N/M2 UE = 8.290E+02 M/S UPW = 8.291E+02 M/S THEP = 7.339E-01 CM  
 TW = 3.038E+02 DEG.K RE = 1.912E+06 1/M RPW = 1.909E+06 1/M THMP = 3.248E-01 CM

N	Y (CM)	M	PS/PSW	IT/TTE	D/DE	T/TE	U/UE	DP/DPE	TP/TPE	UP/UPE
1	0.0000	0.0000	1.0000	.7304	.2422	4.1143	0.0000	.9974	.9989	1.0001
2	.0063	.0334	1.0000	.7311	.2420	4.1171	.0141	.9974	.9989	1.0001
3	.0063	.0420	1.0000	.7308	.2421	4.1151	.0177	.9974	.9989	1.0001
4	.0114	.0708	1.0000	.7300	.2426	4.1074	.0298	.9974	.9989	1.0001
5	.0150	.0962	1.0000	.7301	.2427	4.1050	.0405	.9974	.9989	1.0001
6	.0269	.1541	1.0000	.7314	.2430	4.1000	.0648	.9974	.9989	1.0001
7	.0373	.2494	1.0000	.7352	.2436	4.0901	.1048	.9974	.9989	1.0001
8	.0612	.4599	1.0000	.7462	.2471	4.0325	.1919	.9974	.9989	1.0001
9	.0836	.6098	1.0000	.7580	.2507	3.9739	.2526	.9974	.9989	1.0001
10	.1128	.8222	1.0000	.7731	.2597	3.8357	.3346	.9974	.9989	1.0001
11	.1557	1.0540	1.0000	.7929	.2726	3.6544	.4186	.9974	.9989	1.0001
12	.2210	1.3189	1.0000	.8079	.2951	3.3760	.5035	.9974	.9989	1.0001
13	.3170	1.5207	1.0000	.8173	.3165	3.1478	.5606	.9974	.9989	1.0001
14	.4206	1.6673	1.0000	.8214	.3351	2.9736	.5974	.9974	.9989	1.0001
15	.5420	1.7597	1.0000	.8239	.3477	2.8657	.6190	.9974	.9989	1.0001
16	.6541	1.8390	1.0000	.8252	.3593	2.7727	.6363	.9974	.9989	1.0001
17	.7676	1.9130	1.0000	.8270	.3705	2.6894	.6519	.9974	.9989	1.0001
18	.8847	1.9732	1.0000	.8291	.3795	2.6255	.6643	.9974	.9989	1.0001
19	.9992	2.0443	1.0000	.8335	.3896	2.5573	.6792	.9974	.9989	1.0001
20	1.1209	2.1146	1.0000	.8360	.4008	2.4859	.6927	.9974	.9989	1.0001
21	1.2850	2.2115	1.0000	.8401	.4165	2.3920	.7107	.9974	.9989	1.0001
22	1.5504	2.3705	1.0000	.8478	.4431	2.2483	.7385	.9974	.9989	1.0001
23	1.8064	2.5376	1.0000	.8570	.4722	2.1099	.7659	.9974	.9989	1.0001
24	2.1382	2.7192	1.0000	.8654	.5066	1.9665	.7923	.9974	.9989	1.0001
25	2.3465	2.8678	1.0000	.8721	.5365	1.8572	.8120	.9974	.9989	1.0001
26	2.7351	3.1333	1.0001	.8835	.5934	1.6792	.8436	.9974	.9990	1.0001
27	3.0005	3.2993	1.0002	.8904	.6313	1.5785	.8613	.9975	.9990	1.0001
28	3.3322	3.5105	1.0003	.8991	.6819	1.4616	.8818	.9976	.9990	1.0001
29	3.5786	3.6722	1.0004	.9060	.7221	1.3804	.8965	.9977	.9991	1.0001
30	3.8712	3.8650	1.0005	.9153	.7710	1.2929	.9131	.9977	.9991	1.0001
31	4.1981	4.0444	1.0006	.9247	.8175	1.2194	.9280	.9978	.9991	1.0001
32	4.6462	4.2660	1.0008	.9360	.8775	1.1363	.9449	.9979	.9992	1.0001
33	4.9172	4.3801	1.0009	.9422	.9090	1.0971	.9533	.9980	.9992	1.0001
34	5.2481	4.4905	1.0010	.9506	.9375	1.0638	.9623	.9981	.9992	1.0001
35	5.5347	4.5561	1.0012	.9567	.9536	1.0460	.9682	.9982	.9993	1.0001
36	5.8783	4.6262	1.0013	.9645	.9696	1.0288	.9750	.9983	.9993	1.0001
37	6.2316	4.6798	1.0014	.9715	.9810	1.0170	.9806	.9984	.9994	1.0001
38	6.5435	4.7204	1.0015	.9768	.9896	1.0084	.9849	.9985	.9994	1.0001
39	6.9009	4.7661	1.0017	.9835	.9986	.9994	.9900	.9986	.9994	1.0001
40	7.1549	4.7837	1.0018	.9872	1.0010	.9971	.9925	.9986	.9995	1.0001
41	7.3995	4.7982	1.0019	.9903	1.0029	.9953	.9946	.9987	.9995	1.0001
42	7.6347	4.8050	1.0020	.9931	1.0025	.9958	.9963	.9988	.9995	1.0001
43	7.9736	4.8141	1.0021	.9969	1.0020	.9964	.9985	.9989	.9995	1.0000
44	8.3309	4.8128	1.0037	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
45	8.5568	4.8114	1.0053	1.0012	.9999	1.0017	1.0006	1.0011	1.0005	1.0000
46	8.8108	4.7931	1.0275	1.0026	1.0142	1.0094	1.0006	1.0169	1.0067	.9923

TABLE 5 NOL BOUNDARY LAYER CHANNEL PROFILE DATA  
RUN NO 901301

STA = 2.210E+00 M ME = 4.856E+00 MPW = 4.863E+00 DELP = 5.503E+00 CM  
 PO = 1.033E+06 N/M2 DE = 1.097E-01 KG/M3 OPW = 1.097E-01 KG/M3 DSTRP = 2.026E+00 CM  
 TO = 4.188E+02 DEG.K TE = 7.327E+01 DEG.K TPW = 7.327E+01 DEG.K THP = 2.623E-01 CM  
 PSW = 2.293E+03 N/M2 UE = 8.332E+02 M/S UPW = 8.332E+02 M/S THEP = 4.753E-01 CM  
 TW = 3.050E+02 DEG.K RE = 1.834E+07 1/M RPW = 1.834E+07 1/M THHP = 1.635E-01 CM

N	Y(CM)	M	PS/PSW	TT/TTE	D/DE	T/TE	U/UE	DP/DPE	TP/TPE	UP/UPE
1	0.0000	0.0000	1.0000	.7282	.2403	4.1621	0.0000	1.0000	1.0000	1.0000
2	.0063	.2446	1.0000	.7345	.2411	4.1483	.1026	1.0000	1.0000	1.0000
3	.0150	.4418	1.0000	.7428	.2447	4.0864	.1839	1.0000	1.0000	1.0000
4	.0376	.9731	1.0000	.7790	.2671	3.7438	.3878	1.0000	1.0000	1.0000
5	.0757	1.3243	1.0000	.8090	.2921	3.4234	.5046	1.0000	1.0000	1.0000
6	.1123	1.4670	1.0000	.8214	.3047	3.2824	.5473	1.0000	1.0000	1.0000
7	.1626	1.5534	1.0000	.8290	.3129	3.1958	.5719	1.0000	1.0000	1.0000
8	.2164	1.6340	1.0000	.8325	.3224	3.1020	.5927	1.0000	1.0000	1.0000
9	.2771	1.6973	1.0000	.8372	.3294	3.0358	.6090	1.0000	1.0000	1.0000
10	.3924	1.8161	1.0000	.8442	.3439	2.9075	.6377	1.0000	1.0000	1.0000
11	.4917	1.9162	1.0000	.8503	.3569	2.8022	.6606	1.0000	1.0000	1.0000
12	.6058	2.0102	1.0000	.8562	.3695	2.7066	.6811	1.0000	1.0000	1.0000
13	.7272	2.0998	1.0000	.8616	.3821	2.6171	.6996	1.0000	1.0000	1.0000
14	.8512	2.2045	1.0000	.8684	.3973	2.5169	.7203	1.0000	1.0000	1.0000
15	.9782	2.2999	1.0000	.8747	.4116	2.4294	.7382	1.0000	1.0000	1.0000
16	1.1829	2.4625	1.0000	.8845	.4377	2.2847	.7665	1.0000	1.0000	1.0000
17	1.1877	2.4656	1.0000	.8841	.4385	2.2806	.7668	1.0000	1.0000	1.0000
18	1.3840	2.6350	1.0000	.8941	.4674	2.1396	.7937	1.0000	1.0000	1.0000
19	1.6782	2.8841	1.0000	.9075	.5135	1.9473	.8288	1.0000	1.0000	1.0000
20	2.0018	3.1805	1.0000	.9212	.5742	1.7417	.8644	1.0000	1.0000	1.0000
21	2.3254	3.4499	1.0000	.9327	.6341	1.5771	.8922	1.0000	1.0000	1.0000
22	2.6380	3.7214	1.0000	.9429	.6995	1.4296	.9163	1.0000	1.0000	1.0000
23	3.0549	4.0682	1.0000	.9540	.7904	1.2651	.9423	1.0000	1.0000	1.0000
24	3.4138	4.2853	1.0000	.9622	.8497	1.1770	.9574	1.0000	1.0000	1.0000
25	3.8499	4.4770	1.0000	.9707	.9028	1.1077	.9704	1.0000	1.0000	1.0000
26	4.2862	4.6003	1.0000	.9761	.9378	1.0663	.9783	1.0000	1.0000	1.0000
27	4.7709	4.7069	1.0000	.9831	.9665	1.0347	.9860	1.0000	1.0000	1.0000
28	5.2454	4.7768	1.0000	.9904	.9828	1.0175	.9923	1.0000	1.0000	1.0000
* 29	5.5027	4.8246	1.0000	.9938	.9956	1.0044	.9958	1.0000	1.0000	1.0000
30	5.7709	4.8481	1.0000	.9974	1.0000	1.0000	.9984	1.0000	1.0000	1.0000
** 31	6.0282	4.8558	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
32	6.3183	4.8610	1.0000	1.0018	1.0000	1.0000	1.0011	1.0000	1.0000	1.0000
33	7.7188	4.8586	1.0000	1.0035	.9975	1.0025	1.0018	1.0000	1.0000	1.0000
34	8.1585	4.8614	1.0000	1.0041	.9973	1.0022	1.0023	1.0000	1.0000	1.0000
35	8.5590	4.8614	1.0000	1.0043	.9976	1.0024	1.0023	1.0000	1.0000	1.0000
36	8.9400	4.8614	1.0000	1.0046	.9973	1.0027	1.0025	1.0000	1.0000	1.0000

TABLE 5 NOL BOUNDARY LAYER CHANNEL PROFILE DATA  
RUN NO 901302

STA = 2.210E+00 M ME = 4.890E+00 MPW = 4.890E+00 DELP = 5.671E+00 CM  
 PO = 5.189E+05 N/M2 DE = 5.458E-02 KG/M3 DPW = 5.453E-02 KG/M3 DSTRP = 2.165E+00 CM  
 TO = 4.153E+02 DEG.K TE = 7.132E+01 DEG.K TPW = 7.180E+01 DEG.K THP = 2.886E-01 CM  
 PSW = 1.116E+03 N/M2 UE = 8.308E+02 M/S UPW = 8.308E+02 M/S THEP = 5.202E-01 CM  
 TW = 3.005E+02 DEG.K RE = 9.307E+06 1/M RPM = 9.301E+06 1/M THHP = 1.973E-01 CM

N	Y(CM)	M	PS/PSW	IT/TTE	D/DE	T/TE	U/UE	DP/DPE	TP/TPE	UP/UPE
1	0.0000	0.0000	1.0000	.7235	.2387	4.1839	0.0000	.9991	.9997	1.0000
2	.0063	.1665	1.0000	.7260	.2392	4.1752	.0696	.9991	.9997	1.0000
3	.0081	.2065	1.0000	.7272	.2395	4.1699	.0862	.9991	.9997	1.0000
4	.0168	.3556	1.0000	.7335	.2414	4.1374	.1479	.9991	.9997	1.0000
5	.0290	.5307	1.0000	.7433	.2454	4.0693	.2189	.9991	.9997	1.0000
6	.0340	.6173	1.0000	.7487	.2483	4.0230	.2532	.9991	.9997	1.0000
7	.0444	.7781	1.0000	.7593	.2550	3.9170	.3149	.9991	.9997	1.0000
8	.0516	.8880	1.0000	.7675	.2605	3.8339	.3555	.9991	.9997	1.0000
9	.0620	1.0237	1.0000	.7791	.2681	3.7248	.4040	.9991	.9997	1.0000
10	.1781	1.5147	1.0000	.8188	.3077	3.2458	.5580	.9991	.9997	1.0000
11	.2007	1.5495	1.0000	.8206	.3115	3.2063	.5673	.9991	.9997	1.0000
12	.2370	1.5979	1.0000	.8229	.3170	3.1503	.5800	.9991	.9997	1.0000
13	.2753	1.6404	1.0000	.8252	.3219	3.1024	.5908	.9991	.9997	1.0000
14	.3233	1.6848	1.0000	.8272	.3273	3.0517	.6018	.9991	.9997	1.0000
15	.3922	1.7522	1.0000	.8306	.3356	2.9762	.6181	.9991	.9997	1.0000
16	.4821	1.8284	1.0000	.8354	.3450	2.8953	.6362	.9991	.9997	1.0000
17	.6040	1.9261	1.0000	.8412	.3576	2.7929	.6582	.9991	.9997	1.0000
18	.7056	2.0058	1.0000	.8456	.3686	2.7100	.6752	.9991	.9997	1.0000
19	.8131	2.0847	1.0000	.8503	.3796	2.6309	.6914	.9991	.9997	1.0000
20	.9454	2.1750	1.0000	.8555	.3929	2.5421	.7091	.9991	.9997	1.0000
21	1.0551	2.2620	1.0000	.8601	.4063	2.4583	.7252	.9992	.9997	1.0000
22	1.1974	2.3673	1.0000	.8654	.4233	2.3598	.7436	.9992	.9997	1.0000
23	1.1958	2.3673	1.0000	.8651	.4234	2.3590	.7435	.9992	.9997	1.0000
24	1.4313	2.5358	1.0001	.8763	.4506	2.2169	.7720	.9992	.9997	1.0000
25	1.6764	2.7378	1.0002	.8872	.4866	2.0531	.8022	.9993	.9997	1.0000
26	1.9903	3.0084	1.0002	.9013	.5386	1.8549	.8378	.9993	.9997	1.0000
27	2.2941	3.2624	1.0003	.9134	.5918	1.6883	.8668	.9994	.9997	1.0000
28	2.5684	3.5024	1.0004	.9234	.6462	1.5463	.8906	.9994	.9998	1.0000
29	2.9078	3.7974	1.0004	.9343	.7183	1.3911	.9158	.9995	.9998	1.0000
30	3.2278	4.0364	1.0005	.9427	.7805	1.2803	.9339	.9995	.9998	1.0000
31	3.6543	4.3200	1.0006	.9526	.8586	1.1641	.9531	.9996	.9998	1.0000
32	3.9451	4.4637	1.0007	.9589	.8985	1.1124	.9627	.9996	.9999	1.0000
33	4.3233	4.6122	1.0008	.9664	.9397	1.0637	.9727	.9997	.9999	1.0000
34	4.7013	4.7064	1.0009	.9739	.9638	1.0372	.9801	.9998	.9999	1.0000
35	4.9921	4.7582	1.0009	.9793	.9759	1.0245	.9848	.9998	.9999	1.0000
36	5.2327	4.8201	1.0010	.9858	.9902	1.0097	.9904	.9999	.9999	1.0000
37	5.4572	4.8555	1.0011	.9900	.9980	1.0018	.9938	.9999	1.0000	1.0000
* 38	5.6705	4.8835	1.0011	.9937	1.0039	.9960	.9966	.9999	1.0000	1.0000
39	5.8786	4.8987	1.0012	.9976	1.0052	.9948	.9991	1.0000	1.0000	1.0000
** 40	6.0648	4.8904	1.0012	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
41	6.2784	4.8917	.9997	1.0017	.9973	1.0012	1.0009	.9989	.9996	1.0000
42	7.0048	4.8912	1.0002	1.0039	.9954	1.0036	1.0020	.9993	.9997	1.0000
43	7.8636	4.8851	1.0075	1.0049	.9996	1.0067	1.0023	1.0045	1.0018	.9998
44	8.2055	4.8790	1.0149	1.0052	1.0046	1.0091	1.0022	1.0098	1.0039	.9996
45	8.5768	4.8854	1.0071	1.0053	.9989	1.0070	1.0025	1.0042	1.0017	.9998
46	8.8796	4.8842	1.0086	1.0056	.9997	1.0077	1.0026	1.0053	1.0021	.9998

TABLE 5 NOL BOUNDARY LAYER CHANNEL PROFILE DATA  
RUN NO 901303

STA = 2.210E+00 M ME = 4.811E+00 MPW = 4.833E+00 DELP = 7.124E+00 CM  
 PO = 1.035E+05 N/M2 DE = 1.143E-02 KG/M3 DPW = 1.121E-02 KG/M3 DSTRP = 2.697E+00 CM  
 TO = 4.143E+02 DEG.K TE = 7.358E+01 DEG.K TPW = 7.301E+01 DEG.K THP = 3.913E-01 CM  
 PSW = 2.383E+02 N/M2 UE = 8.274E+02 M/S UPW = 8.280E+02 M/S THEP = 7.016E-01 CM  
 TW = 3.018E+02 DEG.K RE = 1.890E+06 1/M RPW = 1.871E+06 1/M THMP = 3.000E-01 CM

N	Y(CM)	M	PS/PSW	T/TTE	D/DE	T/TE	U/UE	DP/DPE	TP/TPE	UP/UPE
1	0.0000	0.0000	1.0000	.7284	.2373	4.1008	0.0000	.9807	.9922	1.0008
2	.0063	.0403	1.0000	.7295	.2370	4.1055	.0170	.9807	.9922	1.0008
3	.0132	.0911	1.0000	.7311	.2368	4.1095	.0384	.9807	.9922	1.0008
4	.0132	.0995	1.0000	.7308	.2370	4.1060	.0419	.9807	.9922	1.0008
5	.0254	.1893	1.0000	.7315	.2380	4.0887	.0796	.9807	.9922	1.0008
6	.0427	.2852	1.0000	.7348	.2390	4.0709	.1196	.9807	.9922	1.0008
7	.0516	.3538	1.0000	.7372	.2403	4.0492	.1480	.9807	.9922	1.0008
8	.0635	.4736	1.0000	.7430	.2430	4.0036	.1969	.9807	.9922	1.0008
9	.0897	.6659	1.0000	.7559	.2489	3.9091	.2736	.9807	.9922	1.0008
10	.1346	.9655	1.0000	.7802	.2628	3.7023	.3861	.9807	.9922	1.0008
11	.1763	1.1897	1.0000	.7953	.2788	3.4895	.4619	.9807	.9922	1.0008
12	.2441	1.3810	1.0000	.8088	.2952	3.2962	.5211	.9807	.9922	1.0008
13	.3012	1.4897	1.0000	.8142	.3065	3.1749	.5517	.9807	.9922	1.0008
14	.3711	1.6036	1.0000	.8214	.3186	3.0537	.5824	.9807	.9922	1.0008
15	.4867	1.7077	1.0000	.8248	.3318	2.9328	.6078	.9807	.9922	1.0008
16	.6149	1.8020	1.0000	.8273	.3446	2.8236	.6294	.9807	.9922	1.0008
17	.7137	1.8697	1.0000	.8281	.3546	2.7439	.6437	.9807	.9922	1.0008
18	.8377	1.9395	1.0000	.8309	.3645	2.6696	.6586	.9807	.9922	1.0008
19	.9500	2.0091	1.0000	.8340	.3746	2.5978	.6730	.9807	.9922	1.0008
20	1.0615	2.0751	1.0000	.8361	.3847	2.5291	.6859	.9807	.9922	1.0008
21	1.1547	2.1134	1.0000	.8374	.3908	2.4901	.6931	.9807	.9922	1.0008
22	1.3297	2.2270	1.0000	.8435	.4081	2.3841	.7147	.9807	.9922	1.0008
23	1.5357	2.3422	1.0000	.8476	.4276	2.2754	.7343	.9807	.9922	1.0008
24	1.8199	2.4949	1.0000	.8549	.4538	2.1441	.7593	.9807	.9922	1.0008
25	2.0947	2.6483	1.0000	.8630	.4812	2.0222	.7827	.9807	.9922	1.0008
26	2.4379	2.8659	1.0000	.8735	.5229	1.8608	.8125	.9807	.9922	1.0008
27	2.8560	3.1263	1.0000	.8854	.5768	1.6870	.8439	.9807	.9922	1.0008
28	3.2050	3.3534	1.0000	.8946	.6277	1.5502	.8678	.9807	.9922	1.0008
29	3.5055	3.5615	1.0000	.9046	.6758	1.4399	.8882	.9807	.9922	1.0008
30	3.8448	3.7868	1.0000	.9147	.7309	1.3313	.9081	.9807	.9922	1.0008
31	4.2227	4.0224	1.0000	.9251	.7914	1.2295	.9270	.9807	.9922	1.0008
32	4.6203	4.2438	1.0002	.9344	.8514	1.1431	.9430	.9808	.9923	1.0008
33	4.9693	4.4140	1.0014	.9430	.8988	1.0842	.9552	.9817	.9926	1.0008
34	5.2291	4.5383	1.0024	.9509	.9327	1.0457	.9646	.9823	.9929	1.0008
35	5.4318	4.6345	1.0031	.9575	.9589	1.0179	.9718	.9828	.9931	1.0007
36	5.6507	4.7104	1.0039	.9648	.9778	.9990	.9785	.9834	.9933	1.0007
37	5.8697	4.7532	1.0047	.9723	.9855	.9919	.9839	.9839	.9935	1.0007
38	6.0503	4.7960	1.0053	.9792	.9937	.9844	.9890	.9844	.9937	1.0007
39	6.2530	4.8172	1.0061	.9859	.9949	.9839	.9931	.9849	.9939	1.0007
* 40	7.1244	4.8266	1.0092	.9925	.9946	.9874	.9968	.9871	.9948	1.0006
41	7.8407	4.8188	1.0187	.9978	.9960	.9953	.9992	.9937	.9975	1.0003
** 42	8.2217	4.8114	1.0277	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
43	8.5341	4.8124	1.0264	1.0024	.9967	1.0020	1.0012	.9991	.9996	1.0000
44	8.8859	4.8109	1.0283	1.0040	.9964	1.0042	1.0020	1.0004	1.0002	1.0000



TABLE 5 NOL BOUNDARY LAYER CHANNEL PROFILE DATA  
RUN NO 1071

STA = 1.448E+00 M ME = 4.903E+00 MPW = 4.971E+00 DELP = 6.059E+00 CM  
 PO = 5.186E+05 N/M2 DE = 5.319E-02 KG/M3 DPW = 5.016E-02 KG/M3 DSTRP = 1.657E+00 CM  
 TO = 4.203E+02 DEG.K TE = 7.237E+01 DEG.K TPW = 7.069E+01 DEG.K THP = 2.725E-01 CM  
 PSW = 1.014E+03 N/M2 UE = 8.361E+02 M/S UPW = 8.381E+02 M/S THEP = 5.028E-01 CM  
 TW = 2.948E+02 DEG.K RE = 9.051E+06 1/M RPW = 8.781E+06 1/M TMHP = 2.444E-01 CM

N	Y(CM)	M	PS/PSW	IT/YTE	D/DE	T/TE	U/UE	DP/DPE	TP/TPE	UP/UPE
1	0.0000	0.0000	1.0000	.7013	.2262	4.0732	0.0000	.9431	.9768	1.0024
2	.0063	.1962	1.0000	.7094	.2253	4.0883	.0809	.9431	.9768	1.0024
3	.0140	.3026	1.0000	.7155	.2257	4.0810	.1247	.9431	.9768	1.0024
4	.0165	.3635	1.0000	.7178	.2268	4.0615	.1494	.9431	.9768	1.0024
5	.0216	.4584	1.0000	.7269	.2274	4.0515	.1882	.9431	.9768	1.0024
6	.0292	.6072	1.0000	.7390	.2305	3.9975	.2476	.9431	.9768	1.0024
7	.0343	.7149	1.0000	.7462	.2343	3.9317	.2891	.9431	.9768	1.0024
8	.0444	.9693	1.0000	.7695	.2449	3.7620	.3835	.9431	.9768	1.0024
9	.0521	1.0632	1.0000	.7709	.2523	3.6518	.4144	.9431	.9768	1.0024
10	.0724	1.3616	1.0000	.7886	.2757	3.3414	.5076	.9431	.9768	1.0024
11	.0876	1.5006	1.0000	.7917	.2906	3.1704	.5450	.9431	.9768	1.0024
12	.1130	1.6109	1.0000	.7959	.3027	3.0429	.5731	.9431	.9768	1.0024
13	.1410	1.6900	1.0000	.8007	.3113	2.9596	.5930	.9431	.9768	1.0024
14	.1638	1.7391	1.0000	.8045	.3164	2.9112	.6052	.9431	.9768	1.0024
15	.1816	1.7747	1.0000	.8062	.3207	2.8725	.6135	.9431	.9768	1.0024
16	.1969	1.8053	1.0000	.8061	.3251	2.8341	.6199	.9431	.9768	1.0024
17	.2299	1.8531	1.0000	.8085	.3309	2.7838	.6306	.9431	.9768	1.0024
18	.2527	1.8873	1.0000	.8104	.3352	2.7486	.6382	.9431	.9768	1.0024
19	.3289	1.9889	1.0000	.8171	.3477	2.6495	.6603	.9431	.9768	1.0024
20	.5118	2.2219	1.0000	.8316	.3791	2.4303	.7065	.9431	.9768	1.0024
21	.7785	2.5357	1.0000	.8495	.4268	2.1582	.7598	.9431	.9768	1.0024
22	1.0223	2.8006	1.0000	.8654	.4708	1.9567	.7990	.9431	.9768	1.0024
23	1.2764	3.0670	1.0000	.8825	.5179	1.7788	.8343	.9431	.9768	1.0024
24	1.4999	3.2862	1.0000	.8923	.5617	1.6401	.8584	.9431	.9768	1.0024
25	1.7589	3.5439	1.0000	.9040	.6162	1.4950	.8838	.9431	.9768	1.0024
26	1.9825	3.7443	1.0000	.9119	.6617	1.3922	.9011	.9431	.9768	1.0024
27	2.1984	3.9125	1.0013	.9197	.7014	1.3151	.9151	.9440	.9772	1.0024
28	2.4651	4.0958	1.0034	.9270	.7478	1.2362	.9288	.9454	.9778	1.0023
29	2.7826	4.2763	1.0059	.9349	.7949	1.1658	.9417	.9471	.9785	1.0022
30	3.0772	4.4157	1.0083	.9395	.8341	1.1136	.9504	.9487	.9792	1.0022
31	3.3566	4.5142	1.0116	.9455	.8614	1.0819	.9577	.9509	.9801	1.0021
32	3.6157	4.5923	1.0147	.9528	.8814	1.0606	.9646	.9530	.9809	1.0020
33	3.8595	4.6640	1.0176	.9573	.9022	1.0391	.9697	.9549	.9817	1.0019
34	4.1059	4.7315	1.0206	.9620	.9218	1.0200	.9746	.9569	.9825	1.0018
35	4.3751	4.7814	1.0246	.9684	.9352	1.0093	.9797	.9596	.9836	1.0017
36	4.6571	4.8123	1.0288	.9709	.9465	1.0013	.9822	.9624	.9848	1.0016
37	5.1346	4.8742	1.0358	.9800	.9643	.9895	.9889	.9671	.9867	1.0014
38	5.5461	4.8888	1.0416	.9842	.9703	.9889	.9916	.9710	.9883	1.0012
* 39	6.0592	4.9319	1.0489	.9911	.9845	.9815	.9966	.9758	.9902	1.0010
40	6.5519	4.9217	1.0616	.9967	.9874	.9904	.9990	.9842	.9937	1.0007
41	7.0599	4.9073	1.0799	.9996	.9967	.9982	1.0000	.9963	.9985	1.0002
** 42	7.5959	4.9029	1.0855	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
43	8.0886	4.8884	1.1043	1.0012	1.0111	1.0061	1.0001	1.0123	1.0049	.9995
44	8.6068	4.8720	1.1259	1.0042	1.0221	1.0147	1.0010	1.0264	1.0105	.9989
45	9.1123	4.8608	1.1410	1.0063	1.0297	1.0208	1.0017	1.0363	1.0143	.9985
46	9.5796	4.8515	1.1538	1.0058	1.0385	1.0235	1.0011	1.0445	1.0176	.9982
47	10.1613	4.8379	1.1726	1.0078	1.0485	1.0303	1.0016	1.0567	1.0223	.9977

TABLE 5 NOL BOUNDARY LAYER CHANNEL PROFILE DATA  
RUN NO 1072

STA = 1.448E+00 M ME = 4.718E+00 MPW = 4.830E+00 DELP = 8.426E+00 CM  
 PO = 9.928E+04 N/M2 DE = 1.182E-02 KG/M3 DPW = 1.072E-02 KG/M3 DSTRP = 1.994E+00 CM  
 TO = 4.292E+02 DEG.K TE = 7.873E+01 DEG.K TPW = 7.572E+01 DEG.K THP = 4.187E-01 CM  
 PSW = 2.294E+02 N/M2 UE = 8.391E+02 M/S UPW = 8.427E+02 M/S THEP = 7.663E-01 CM  
 TW = 2.982E+02 DEG.K RE = 1.841E+06 1/M RPW = 1.750E+06 1/M THHP = 4.474E-01 CM

N	Y(CM)	M	PS/PSW	TT/TTE	D/DE	T/TE	U/UE	DP/DPE	TP/TPE	UP/UPE
1	0.0000	0.0000	1.0000	.6947	.2303	3.7868	0.0000	.9070	.9617	1.0043
2	.0063	.0423	1.0000	.6962	.2299	3.7938	.0174	.9070	.9617	1.0043
3	.0140	.0881	1.0000	.7016	.2284	3.8187	.0365	.9070	.9617	1.0043
4	.0191	.1312	1.0000	.6987	.2298	3.7955	.0542	.9070	.9617	1.0043
5	.0368	.2279	1.0000	.7057	.2291	3.8075	.0943	.9070	.9617	1.0043
6	.0724	.6560	1.0000	.7356	.2363	3.6920	.2672	.9070	.9617	1.0043
7	.1130	1.0234	1.0000	.7475	.2589	3.3692	.3982	.9070	.9617	1.0043
8	.1460	1.2083	1.0000	.7614	.2715	3.2126	.4591	.9070	.9617	1.0043
9	.1689	1.3149	1.0000	.7686	.2802	3.1131	.4918	.9070	.9617	1.0043
10	.1943	1.4191	1.0000	.7716	.2909	2.9986	.5209	.9070	.9617	1.0043
11	.2146	1.4833	1.0000	.7757	.2971	2.9361	.5388	.9070	.9617	1.0043
12	.3543	1.7576	1.0000	.7914	.3271	2.6667	.6084	.9070	.9617	1.0043
13	.6820	2.1239	1.0000	.8024	.3794	2.2993	.6827	.9070	.9617	1.0043
14	.9893	2.3819	1.0000	.8120	.4207	2.0736	.7271	.9070	.9617	1.0043
15	1.2154	2.5639	1.0000	.8186	.4525	1.9278	.7546	.9070	.9617	1.0043
16	1.5126	2.8111	1.0000	.8296	.4977	1.7525	.7889	.9070	.9617	1.0043
17	1.7081	2.9672	1.0000	.8388	.5267	1.6561	.8094	.9070	.9617	1.0043
18	1.9952	3.1966	1.0000	.8496	.5733	1.5216	.8359	.9070	.9617	1.0043
19	2.2593	3.3953	1.0000	.8576	.6158	1.4142	.8559	.9070	.9617	1.0043
20	2.5387	3.5861	1.0000	.8671	.6592	1.3232	.8744	.9070	.9617	1.0043
21	3.0301	3.9164	1.0000	.8848	.7356	1.1858	.9040	.9070	.9617	1.0043
22	3.6208	4.2111	1.0000	.9008	.8078	1.0799	.9276	.9070	.9617	1.0043
23	4.1262	4.4016	1.0000	.9155	.8521	1.0237	.9440	.9070	.9617	1.0043
24	4.6393	4.5536	1.0000	.9292	.8864	.9841	.9575	.9070	.9617	1.0043
25	5.1600	4.6843	1.0000	.9429	.9145	.9539	.9698	.9070	.9617	1.0043
26	5.5867	4.7344	1.0141	.9524	.9342	.9469	.9765	.9161	.9656	1.0039
27	6.1176	4.7651	1.0316	.9646	.9484	.9488	.9839	.9274	.9703	1.0033
28	6.6307	4.7915	1.0486	.9739	.9635	.9494	.9896	.9383	.9748	1.0028
29	7.1311	4.7714	1.0742	.9818	.9723	.9637	.9929	.9546	.9816	1.0021
30	7.7254	4.7514	1.1004	.9896	.9814	.9781	.9961	.9712	.9884	1.0013
31	8.4264	4.7354	1.1219	.9960	.9887	.9898	.9987	.9847	.9938	1.0007
32	9.0005	4.7175	1.1464	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
33	9.5618	4.7014	1.1690	1.0026	1.0114	1.0082	1.0007	1.0140	1.0056	.9994
34	10.1130	4.6901	1.1852	1.0042	1.0198	1.0138	1.0010	1.0241	1.0096	.9989

TABLE 5 NOL BOUNDARY LAYER CHANNEL PROFILE DATA  
RUN NO 1081

STA = 1.702E+00 M ME = 4.907E+00 MPW = 4.955E+00 DELP = 6.422E+00 CM  
 PO = 5.171E+05 N/M2 DE = 5.278E-02 KG/M3 DPW = 5.061E-02 KG/M3 DSTRP = 1.878E+00 CM  
 TO = 4.210E+02 DEG.K TE = 7.240E+01 DEG.K TPW = 7.120E+01 DEG.K THP = 2.885E-01 CM  
 PSW = 1.030E+03 N/M2 UE = 8.369E+02 M/S UPW = 8.383E+02 M/S THEP = 5.279E-01 CM  
 TW = 2.968E+02 DEG.K RE = 8.985E+06 1/M RPW = 8.793E+06 1/M THMP = 2.425E-01 CM

N	Y (CM)	M	PS/PSW	TT/TTE	D/DE	T/TE	U/UE	DP/DPE	TP/TPE	UP/UPE
1	0.0000	0.0000	1.0000	.7049	.2301	4.0990	0.0000	.9590	.9834	1.0017
2	.0063	.1804	1.0000	.7133	.2288	4.1214	.0747	.9590	.9834	1.0017
3	.0140	.2956	1.0000	.7202	.2291	4.1164	.1222	.9590	.9834	1.0017
4	.0241	.4791	1.0000	.7317	.2318	4.0682	.1969	.9590	.9834	1.0017
5	.0317	.6202	1.0000	.7432	.2350	4.0131	.2532	.9590	.9834	1.0017
6	.0368	.7140	1.0000	.7498	.2383	3.9566	.2895	.9590	.9834	1.0017
7	.0419	.8026	1.0000	.7562	.2421	3.8957	.3229	.9590	.9834	1.0017
8	.0470	.9100	1.0000	.7668	.2465	3.8254	.3627	.9590	.9834	1.0017
9	.0521	.9727	1.0000	.7701	.2504	3.7660	.3847	.9590	.9834	1.0017
10	.0953	1.3918	1.0000	.7911	.2844	3.3159	.5165	.9590	.9834	1.0017
11	.1156	1.4864	1.0000	.7957	.2939	3.2090	.5427	.9590	.9834	1.0017
12	.1257	1.5101	1.0000	.7971	.2962	3.1836	.5491	.9590	.9834	1.0017
13	.1588	1.5950	1.0000	.8008	.3055	3.0864	.5711	.9590	.9834	1.0017
14	.2019	1.6662	1.0000	.8036	.3139	3.0046	.5886	.9590	.9834	1.0017
15	.2654	1.7434	1.0000	.8087	.3224	2.9249	.6077	.9590	.9834	1.0017
16	.5169	2.0206	1.0000	.8268	.3563	2.6469	.6700	.9590	.9834	1.0017
17	.6794	2.1921	1.0000	.8373	.3798	2.4831	.7040	.9590	.9834	1.0017
18	.8293	2.3378	1.0000	.8470	.4007	2.3533	.7309	.9590	.9834	1.0017
19	1.0884	2.5810	1.0000	.8619	.4388	2.1491	.7711	.9590	.9834	1.0017
20	1.3297	2.8112	1.0000	.8746	.4785	1.9710	.8043	.9590	.9834	1.0017
21	1.5710	3.0444	1.0000	.8881	.5211	1.8097	.8347	.9590	.9834	1.0017
22	1.8301	3.2983	1.0000	.8990	.5728	1.6463	.8625	.9590	.9834	1.0017
23	2.0383	3.4958	1.0001	.9058	.6167	1.5293	.8811	.9590	.9834	1.0017
24	2.2212	3.6516	1.0015	.9144	.6513	1.4502	.8962	.9600	.9838	1.0017
25	2.4270	3.8179	1.0032	.9210	.6916	1.3680	.9100	.9612	.9843	1.0016
26	2.6454	3.9837	1.0050	.9255	.7350	1.2894	.9219	.9624	.9848	1.0016
27	2.8512	4.1243	1.0066	.9325	.7706	1.2319	.9329	.9635	.9852	1.0015
28	3.1051	4.2816	1.0087	.9378	.8140	1.1687	.9433	.9649	.9858	1.0015
29	3.3617	4.4024	1.0108	.9442	.8465	1.1261	.9521	.9663	.9864	1.0014
30	3.5954	4.4912	1.0127	.9488	.8713	1.0960	.9582	.9676	.9869	1.0014
31	3.9205	4.5974	1.0153	.9563	.8999	1.0639	.9644	.9694	.9877	1.0013
32	4.1821	4.6706	1.0174	.9617	.9201	1.0428	.9720	.9709	.9883	1.0012
33	4.5657	4.7562	1.0205	.9673	.9451	1.0183	.9781	.9730	.9891	1.0011
34	4.8882	4.8156	1.0232	.9728	.9616	1.0034	.9831	.9748	.9898	1.0011
35	5.2261	4.8608	1.0259	.9781	.9739	.9934	.9874	.9767	.9906	1.0010
36	5.5029	4.8800	1.0281	.9818	.9787	.9907	.9899	.9782	.9912	1.0009
37	5.9271	4.9086	1.0316	.9872	.9860	.9866	.9937	.9805	.9922	1.0008
38	6.4224	4.9268	1.0356	.9930	.9901	.9863	.9972	.9832	.9933	1.0007
39	6.6688	4.9206	1.0433	.9959	.9925	.9913	.9984	.9885	.9954	1.0005
40	6.9253	4.9211	1.0427	.9977	.9903	.9929	.9994	.9880	.9952	1.0005
41	7.1793	4.9150	1.0501	.9983	.9947	.9956	.9995	.9931	.9972	1.0003
42	7.4816	4.9135	1.0520	1.0006	.9937	.9984	1.0006	.9943	.9977	1.0002
43	7.7102	4.9068	1.0604	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
44	7.9591	4.9063	1.0608	1.0014	.9989	1.0015	1.0007	1.0003	1.0001	1.0000
45	8.1648	4.9004	1.0685	1.0035	1.0020	1.0057	1.0015	1.0055	1.0022	.9998
46	8.3757	4.8975	1.0721	1.0043	1.0036	1.0074	1.0018	1.0079	1.0031	.9997
47	8.6119	4.8979	1.0715	1.0072	1.0002	1.0103	1.0033	1.0075	1.0030	.9997
48	8.8303	4.8904	1.0811	1.0056	1.0082	1.0112	1.0022	1.0139	1.0055	.9994
49	9.0630	4.8856	1.0873	1.0066	1.0114	1.0139	1.0026	1.0181	1.0072	.9993
50	9.2164	4.8808	1.0935	1.0052	1.0169	1.0141	1.0017	1.0222	1.0088	.9991
51	9.6812	.8761	1.0996	1.0080	1.0181	1.0185	1.0029	1.0263	1.0104	.9989
52	10.0800	4.8707	1.1067	1.0086	1.0222	1.0210	1.0030	1.0310	1.0123	.9987

TABLE 5 NOL BOUNDARY LAYER CHANNEL PROFILE DATA  
RUN NO 1082

STA = 1.702E+00 M	ME = 4.786E+00	MPW = 4.822E+00	DELP = 8.165E+00 CM
PO = 1.011E+05 N/M2	DE = 1.164E-02 KG/M3	DPW = 1.127E-02 KG/M3	DSTRP = 2.347E+00 CM
TO = 4.267E+02 DEG.K	TE = 7.647E+01 DEG.K	TPW = 7.548E+01 DEG.K	THP = 4.432E-01 CM
PSW = 2.358E+02 N/M2	UE = 8.389E+02 M/S	UPW = 8.400E+02 M/S	THEP = 8.044E-01 CM
TW = 2.973E+02 DEG.K	RE = 1.871E+06 1/M	RPW = 1.839E+06 1/M	THHP = 4.417E-01 CM

N	Y(CM)	M	PS/PSW	IT/TTE	D/DE	T/TE	U/UE	DP/DPE	TP/TPE	UP/UPE
1	0.0000	0.0000	1.0000	.6967	.2458	3.8876	0.0000	.9681	.9871	1.0014
2	.0063	.0533	1.0000	.6986	.2453	3.8963	.0220	.9681	.9871	1.0014
3	.0089	.0695	1.0000	.6999	.2449	3.9017	.0287	.9681	.9871	1.0014
4	.0165	.1231	1.0000	.7045	.2438	3.9197	.0509	.9681	.9871	1.0014
5	.0241	.1596	1.0000	.7065	.2436	3.9226	.0660	.9681	.9871	1.0014
6	.0292	.1873	1.0000	.7060	.2443	3.9124	.0774	.9681	.9871	1.0014
7	.0394	.2407	1.0000	.7100	.2440	3.9166	.0995	.9681	.9871	1.0014
8	.0470	.2843	1.0000	.7105	.2449	3.9016	.1173	.9681	.9871	1.0014
9	.0546	.3513	1.0000	.7144	.2456	3.8905	.1448	.9681	.9871	1.0014
10	.0902	.6383	1.0000	.7363	.2515	3.7991	.2600	.9681	.9871	1.0014
11	.1334	.9567	1.0000	.7512	.2697	3.5432	.3763	.9681	.9871	1.0014
12	.1689	1.1382	1.0000	.7578	.2845	3.3585	.4359	.9681	.9871	1.0014
13	.4686	1.7534	1.0000	.7920	.3492	2.7370	.6061	.9681	.9871	1.0014
14	.6693	1.9278	1.0000	.7989	.3737	2.5574	.6442	.9681	.9871	1.0014
15	1.0198	2.1839	1.0000	.8093	.4134	2.3115	.6938	.9681	.9871	1.0014
16	1.2128	2.3168	1.0000	.8123	.4371	2.1861	.7158	.9681	.9871	1.0014
17	1.4288	2.4569	1.0000	.8205	.4607	2.0744	.7394	.9681	.9871	1.0014
18	1.6726	2.6442	1.0000	.8279	.4961	1.9264	.7669	.9681	.9871	1.0014
19	1.9317	2.8367	1.0000	.8382	.5331	1.7925	.7936	.9681	.9871	1.0014
20	2.1628	3.0037	1.0000	.8468	.5671	1.6851	.8148	.9681	.9871	1.0014
21	2.4168	3.1820	1.0000	.8555	.6055	1.5782	.8353	.9681	.9871	1.0014
22	2.6530	3.3543	1.0000	.8647	.6438	1.4845	.8540	.9681	.9871	1.0014
23	3.1966	3.7325	1.0000	.8803	.7366	1.2974	.8884	.9681	.9871	1.0014
24	3.7173	4.0308	1.0000	.8950	.8132	1.1753	.9131	.9681	.9871	1.0014
25	4.0348	4.1861	1.0000	.9040	.8526	1.1209	.9261	.9681	.9871	1.0014
26	4.4793	4.3648	1.0000	.9172	.8982	1.0640	.9408	.9681	.9871	1.0014
27	4.9797	4.5031	1.0000	.9294	.9316	1.0258	.9531	.9681	.9871	1.0014
28	5.4877	4.6343	1.0000	.9432	.9614	.9940	.9655	.9681	.9871	1.0014
29	5.9626	4.7014	1.0000	.9526	.9745	.9806	.9729	.9681	.9871	1.0014
30	6.4580	4.7624	1.0000	.9639	.9836	.9716	.9809	.9681	.9871	1.0014
31	6.7983	4.7987	1.0000	.9709	.9888	.9665	.9858	.9681	.9871	1.0014
32	7.2301	4.7990	1.0111	.9790	.9915	.9745	.9899	.9758	.9902	1.0011
33	7.5730	4.7925	1.0198	.9855	.9913	.9832	.9930	.9818	.9927	1.0008
* 34	8.1648	4.7947	1.0350	.9903	1.0020	.9872	.9955	.9922	.9969	1.0003
35	8.6754	4.7891	1.0419	.9961	1.0009	.9948	.9982	.9969	.9988	1.0001
** 36	9.3002	4.7856	1.0464	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
37	10.0851	4.7715	1.0642	1.0046	1.0075	1.0095	1.0018	1.0121	1.0048	.9995

TABLE 5 NOL BOUNDARY LAYER CHANNEL PROFILE DATA  
RUN NO 1085

STA = 1.905E+00 M ME = 4.895E+00 MPW = 4.899E+00 DELP = 6.623E+00 CM  
 PO = 5.178E+05 N/M2 DE = 5.315E-02 KG/M3 DPW = 5.315E-02 KG/M3 DSTAP = 2.096E+00 CM  
 TO = 4.213E+02 DEG.K TE = 7.272E+01 DEG.K TPW = 7.272E+01 DEG.K THP = 3.111E-01 CM  
 PSW = 1.102E+03 N/M2 UE = 8.369E+02 M/S UPW = 8.369E+02 M/S THEP = 5.668E-01 CM  
 TW = 2.959E+02 DEG.K RE = 9.004E+06 1/M RPW = 9.004E+06 1/M THHP = 2.453E-01 CM

N	Y (CM)	M	PS/PSW	IT/TTE	D/DE	T/TE	U/UE	DP/DPE	TP/TPE	UP/UPE
1	0.0000	0.0000	1.0000	.7024	.2458	4.0689	0.0000	1.0000	1.0000	1.0000
2	.0063	.1682	1.0000	.7104	.2444	4.0924	.0695	1.0000	1.0000	1.0000
3	.0114	.2333	1.0000	.7137	.2445	4.0903	.0964	1.0000	1.0000	1.0000
4	.0165	.2903	1.0000	.7178	.2446	4.0891	.1199	1.0000	1.0000	1.0000
5	.0216	.3648	1.0000	.7225	.2453	4.0772	.1504	1.0000	1.0000	1.0000
6	.0267	.4266	1.0000	.7266	.2462	4.0617	.1756	1.0000	1.0000	1.0000
7	.0368	.5846	1.0000	.7389	.2496	4.0066	.2390	1.0000	1.0000	1.0000
8	.0419	.6959	1.0000	.7474	.2533	3.9477	.2624	1.0000	1.0000	1.0000
9	.0470	.8008	1.0000	.7544	.2582	3.8734	.3219	1.0000	1.0000	1.0000
10	.0521	.9107	1.0000	.7608	.2645	3.7801	.3617	1.0000	1.0000	1.0000
11	.0572	.9661	1.0000	.7663	.2673	3.7410	.3817	1.0000	1.0000	1.0000
12	.0825	1.2408	1.0000	.7817	.2888	3.4625	.4716	1.0000	1.0000	1.0000
13	.1080	1.3813	1.0000	.7909	.3015	3.3162	.5138	1.0000	1.0000	1.0000
14	.1308	1.4558	1.0000	.7948	.3092	3.2338	.5348	1.0000	1.0000	1.0000
15	.1562	1.5154	1.0000	.7986	.3154	3.1704	.5512	1.0000	1.0000	1.0000
16	.1841	1.5610	1.0000	.8012	.3205	3.1206	.5633	1.0000	1.0000	1.0000
17	.2045	1.5910	1.0000	.8028	.3239	3.0876	.5711	1.0000	1.0000	1.0000
18	.2299	1.6194	1.0000	.8040	.3273	3.0551	.5782	1.0000	1.0000	1.0000
19	.2705	1.6682	1.0000	.8066	.3331	3.0020	.5904	1.0000	1.0000	1.0000
20	.5296	1.9220	1.0000	.8250	.3638	2.7485	.6509	1.0000	1.0000	1.0000
21	.7810	2.1471	1.0000	.8403	.3948	2.5328	.6980	1.0000	1.0000	1.0000
22	1.0401	2.3612	1.0000	.8542	.4274	2.3397	.7378	1.0000	1.0000	1.0000
23	1.2891	2.5764	1.0000	.8676	.4631	2.1593	.7734	1.0000	1.0000	1.0000
24	1.5456	2.8009	1.0000	.8799	.5040	1.9842	.8059	1.0000	1.0000	1.0000
25	1.7844	3.0179	1.0000	.8916	.5463	1.8306	.8341	1.0000	1.0000	1.0000
26	2.0409	3.2532	1.0000	.9022	.5963	1.6769	.8606	1.0000	1.0000	1.0000
27	2.3000	3.4729	1.0000	.9114	.6462	1.5474	.8825	1.0000	1.0000	1.0000
28	2.5489	3.6732	1.0000	.9199	.6940	1.4408	.9007	1.0000	1.0000	1.0000
29	3.0696	4.0506	1.0000	.9340	.7913	1.2637	.9302	1.0000	1.0000	1.0000
30	3.5776	4.3080	1.0000	.9443	.8613	1.1610	.9482	1.0000	1.0000	1.0000
31	4.0323	4.4632	1.0000	.9535	.9023	1.1083	.9598	1.0000	1.0000	1.0000
32	4.5479	4.6091	1.0000	.9618	.9421	1.0615	.9700	1.0000	1.0000	1.0000
33	5.0787	4.7142	1.0000	.9720	.9669	1.0342	.9793	1.0000	1.0000	1.0000
34	5.6121	4.7953	1.0000	.9806	.9856	1.0146	.9867	1.0000	1.0000	1.0000
35	6.1176	4.8444	1.0000	.9860	.9967	1.0033	.9912	1.0000	1.0000	1.0000
* 36	6.6231	4.8740	1.0000	.9925	1.0003	.9997	.9955	1.0000	1.0000	1.0000
37	7.1361	4.8910	1.0000	.9975	1.0010	.9990	.9986	1.0000	1.0000	1.0000
** 38	7.6390	4.8955	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
39	8.1420	4.8992	1.0017	1.0000	1.0029	.9988	1.0002	1.0012	1.0005	.9999
40	8.6627	4.9002	1.0003	1.0030	.9989	1.0014	1.0017	1.0002	1.0001	1.0000
41	9.1656	4.8948	1.0067	1.0053	1.0012	1.0055	1.0026	1.0048	1.0019	.9998
42	9.6558	4.8823	1.0218	1.0064	1.0108	1.0109	1.0027	1.0155	1.0062	.9994
43	10.1714	4.8859	1.0174	1.0067	1.0074	1.0100	1.0030	1.0124	1.0049	.9995

TABLE 5 NOL BOUNDARY LAYER CHANNEL PROFILE DATA  
RUN NO 1216

STA = 1.905E+00 M			ME = 4.821E+00			MPW = 4.857E+00			DELP = 8.678E+00 CM		
PO = 1.051E+05 N/M2			DE = 1.138E-02 KG/M3			DPW = 1.102E-02 KG/M3			DSTRP = 2.474E+00 CM		
TO = 4.271E+02 DEG.K			TE = 7.561E+01 DEG.K			TFW = 7.464E+01 DEG.K			THP = 4.766E-01 CM		
PSW = 2.350E+02 N/M2			UE = 8.404E+02 M/S			UPW = 8.415E+02 M/S			THEP = 8.644E-01 CM		
TW = 2.970E+02 DEG.K			RE = 1.854E+06 1/M			RPW = 1.824E+06 1/M			THHP = 4.847E-01 CM		
N	Y(CM)	M	PS/PSW	TT/TTE	D/DE	T/TE	U/UE	DP/DPE	TP/TPE	UP/UPE	
1	0.0000	0.0000	1.0000	.6955	.2433	3.9287	0.0000	.9684	.9872	1.0014	
2	.0063	.0534	1.0000	.6960	.2433	3.9296	.0220	.9684	.9872	1.0014	
3	.0063	.0620	1.0000	.6973	.2429	3.9361	.0255	.9684	.9872	1.0014	
4	.0114	.0982	1.0000	.6976	.2431	3.9331	.0404	.9684	.9872	1.0014	
5	.0191	.1441	1.0000	.7000	.2428	3.9378	.0593	.9684	.9872	1.0014	
6	.0267	.1951	1.0000	.6983	.2442	3.9148	.0801	.9684	.9872	1.0014	
7	.0317	.2166	1.0000	.6980	.2447	3.9064	.0888	.9684	.9872	1.0014	
8	.0419	.2784	1.0000	.6993	.2458	3.8900	.1139	.9684	.9872	1.0014	
9	.0470	.3159	1.0000	.7016	.2461	3.8854	.1292	.9684	.9872	1.0014	
10	.0546	.3659	1.0000	.7044	.2467	3.8754	.1494	.9684	.9872	1.0014	
11	.0572	.3906	1.0000	.7064	.2469	3.8721	.1594	.9684	.9872	1.0014	
12	.0825	.6128	1.0000	.7174	.2536	3.7691	.2468	.9684	.9872	1.0014	
13	.1080	.7846	1.0000	.7286	.2609	3.6648	.3115	.9684	.9872	1.0014	
14	.1334	.9602	1.0000	.7353	.2726	3.5069	.3730	.9684	.9872	1.0014	
15	.1588	1.1102	1.0000	.7458	.2829	3.3798	.4233	.9684	.9872	1.0014	
16	.1892	1.2315	1.0000	.7545	.2923	3.2702	.4619	.9684	.9872	1.0014	
17	.2248	1.3631	1.0000	.7635	.3040	3.1444	.5013	.9684	.9872	1.0014	
18	.2553	1.4523	1.0000	.7650	.3146	3.0393	.5252	.9684	.9872	1.0014	
19	.5016	1.7948	1.0000	.7831	.3554	2.6903	.6106	.9684	.9872	1.0014	
20	.7836	2.0027	1.0000	.7911	.3855	2.4797	.6541	.9684	.9872	1.0014	
21	1.0427	2.1674	1.0000	.7993	.4107	2.3280	.6859	.9684	.9872	1.0014	
22	1.2865	2.3180	1.0000	.8070	.4351	2.1973	.7127	.9684	.9872	1.0014	
23	1.5329	2.4803	1.0000	.8141	.4637	2.0618	.7387	.9684	.9872	1.0014	
24	1.7894	2.6551	1.0000	.8242	.4949	1.9319	.7654	.9684	.9872	1.0014	
25	2.0511	2.8313	1.0000	.8335	.5286	1.8085	.7898	.9684	.9872	1.0014	
26	2.2974	2.9990	1.0000	.8413	.5630	1.6980	.8106	.9684	.9872	1.0014	
27	2.5514	3.1742	1.0000	.8468	.6026	1.5865	.8293	.9684	.9872	1.0014	
28	3.0797	3.5388	1.0000	.8666	.6844	1.3968	.8675	.9684	.9872	1.0014	
29	3.5877	3.8711	1.0000	.8825	.7665	1.2472	.8967	.9684	.9872	1.0014	
30	4.0856	4.1479	1.0000	.8975	.8375	1.1415	.9192	.9684	.9872	1.0014	
31	4.5936	4.3628	1.0000	.9107	.8933	1.0702	.9361	.9684	.9872	1.0014	
32	5.0889	4.5164	1.0000	.9225	.9319	1.0259	.9488	.9684	.9872	1.0014	
33	5.5867	4.6306	1.0000	.9346	.9577	.9983	.9596	.9684	.9872	1.0014	
34	6.1201	4.7163	1.0000	.9468	.9739	.9816	.9692	.9684	.9872	1.0014	
35	6.6053	4.7801	1.0000	.9584	.9836	.9720	.9775	.9684	.9872	1.0014	
36	7.1209	4.8112	1.0053	.9685	.9889	.9718	.9838	.9721	.9887	1.0012	
37	7.6441	4.8291	1.0107	.9788	.9898	.9762	.9896	.9758	.9902	1.0010	
38	8.1369	4.8457	1.0158	.9873	.9919	.9791	.9945	.9793	.9917	1.0009	
39	8.6779	4.8346	1.0293	.9910	.9975	.9865	.9960	.9886	.9954	1.0005	
40	9.1351	4.8257	1.0403	.9960	1.0001	.9944	.9981	.9961	.9984	1.0002	
41	9.6634	4.8212	1.0460	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	
42	10.1181	4.8122	1.0572	1.0022	1.0054	1.0053	1.0008	1.0076	1.0030	.9997	

TABLE 5 NOL BOUNDARY LAYER CHANNEL PROFILE DATA  
RUN NO 1201

STA = 2.057E+00 M ME = 4.982E+00 MPW = 4.973E+00 DELP = 7.126E+00 CM  
 PO = 5.400E+05 N/M2 DE = 5.202E-02 KG/M3 DPW = 5.202E-02 KG/M3 DSTRP = 2.132E+00 CM  
 TO = 4.225E+02 DEG.K TE = 7.086E+01 DEG.K TPW = 7.086E+01 DEG.K THP = 3.333E-01 CM  
 PSW = 1.053E+03 N/M2 UE = 8.406E+02 M/S UPW = 8.406E+02 M/S THEP = 6.082E-01 CM  
 TW = 2.960E+02 DEG.K RE = 9.109E+06 1/M RPW = 9.109E+06 1/M THHP = 2.898E-01 CM

N	Y (CM)	M	PS/PSW	IT/TTE	D/DE	T/TE	U/UE	DP/DPE	TP/TPE	UP/UPE
1	0.0000	0.0000	1.0000	.7006	.2393	4.1782	0.0000	1.0000	1.0000	1.0000
2	.0063	.1590	1.0000	.7078	.2381	4.1996	.0654	1.0000	1.0000	1.0000
3	.0114	.2319	1.0000	.7122	.2380	4.2023	.0954	1.0000	1.0000	1.0000
4	.0191	.3541	1.0000	.7192	.2390	4.1839	.1454	1.0000	1.0000	1.0000
5	.0241	.4378	1.0000	.7250	.2402	4.1639	.1793	1.0000	1.0000	1.0000
6	.0317	.5643	1.0000	.7344	.2429	4.1173	.2299	1.0000	1.0000	1.0000
7	.0368	.6510	1.0000	.7405	.2457	4.0708	.2636	1.0000	1.0000	1.0000
8	.0444	.8498	1.0000	.7579	.2532	3.9494	.3390	1.0000	1.0000	1.0000
9	.0521	.9257	1.0000	.7620	.2578	3.8791	.3660	1.0000	1.0000	1.0000
10	.0572	.9869	1.0000	.7647	.2620	3.8169	.3870	1.0000	1.0000	1.0000
11	.0876	1.2991	1.0000	.7814	.2870	3.4841	.4868	1.0000	1.0000	1.0000
12	.1080	1.4066	1.0000	.7865	.2976	3.3605	.5176	1.0000	1.0000	1.0000
13	.1384	1.4995	1.0000	.7921	.3069	3.2584	.5434	1.0000	1.0000	1.0000
14	.1613	1.5452	1.0000	.7935	.3122	3.2028	.5551	1.0000	1.0000	1.0000
15	.1867	1.5833	1.0000	.7948	.3168	3.1571	.5647	1.0000	1.0000	1.0000
16	.2096	1.6174	1.0000	.7990	.3197	3.1283	.5742	1.0000	1.0000	1.0000
17	.2400	1.6535	1.0000	.8009	.3239	3.0877	.5832	1.0000	1.0000	1.0000
18	.2781	1.6971	1.0000	.8004	.3302	3.0287	.5928	1.0000	1.0000	1.0000
19	.5398	1.9472	1.0000	.8158	.3614	2.7668	.6502	1.0000	1.0000	1.0000
20	.7785	2.1532	1.0000	.8308	.3890	2.5707	.6930	1.0000	1.0000	1.0000
21	1.0579	2.3754	1.0000	.8440	.4229	2.3648	.7332	1.0000	1.0000	1.0000
22	1.2961	2.5696	1.0000	.8569	.4541	2.2020	.7654	1.0000	1.0000	1.0000
23	1.5481	2.7837	1.0000	.8696	.4916	2.0340	.7969	1.0000	1.0000	1.0000
24	1.8097	3.0130	1.0000	.8813	.5358	1.8665	.8263	1.0000	1.0000	1.0000
25	2.0612	3.2363	1.0000	.8934	.5809	1.7215	.8524	1.0000	1.0000	1.0000
26	2.3178	3.4573	1.0000	.9027	.6299	1.5876	.8744	1.0000	1.0000	1.0000
27	2.6200	3.7125	1.0000	.9116	.6910	1.4472	.8965	1.0000	1.0000	1.0000
28	3.0975	4.0830	1.0000	.9245	.7862	1.2720	.9244	1.0000	1.0000	1.0000
29	3.6944	4.4075	1.0000	.9363	.8749	1.1430	.9459	1.0000	1.0000	1.0000
30	4.2761	4.6220	1.0000	.9474	.9333	1.0715	.9604	1.0000	1.0000	1.0000
31	4.9467	4.7721	1.0000	.9610	.9692	1.0317	.9730	1.0000	1.0000	1.0000
32	5.4369	4.8575	1.0000	.9644	.9945	1.0056	.9778	1.0000	1.0000	1.0000
33	6.0515	4.9239	1.0000	.9772	1.0037	.9963	.9866	1.0000	1.0000	1.0000
34	6.6307	4.9601	1.0000	.9877	1.0052	.9949	.9931	1.0000	1.0000	1.0000
35	7.1260	4.9735	1.0000	.9924	1.0049	.9951	.9959	1.0000	1.0000	1.0000
36	7.8143	4.9795	1.0000	.9976	1.0017	.9984	.9987	1.0000	1.0000	1.0000
37	8.5281	4.9817	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
38	9.3510	4.9828	1.0000	1.0014	.9990	1.0010	1.0007	1.0000	1.0000	1.0000
39	10.1689	5.0008	1.0000	1.0037	1.0026	.9974	1.0025	1.0000	1.0000	1.0000

TABLE 5 NOL BOUNDARY LAYER CHANNEL PROFILE DATA  
RUN NO 1202

STA = 2.057E+00 M ME = 4.808E+00 MPW = 4.815E+00 DELP = 8.970E+00 CM  
 PO = 1.034E+05 N/M2 DE = 1.138E-02 KG/M3 DPW = 1.138E-02 KG/M3 DSTRP = 2.722E+00 CM  
 TO = 4.258E+02 DEG.K TE = 7.574E+01 DEG.K TPW = 7.574E+01 DEG.K THP = 4.838E-01 CM  
 PSW = 2.432E+02 N/M2 UE = 8.387E+02 M/S IIPW = 8.387E+02 M/S THEP = 8.733E-01 CM  
 TW = 2.960E+02 DEG.K RE = 1.848E+06 1/M RPW = 1.848E+06 1/M THHP = 4.541E-01 CM

N	Y (CM)	M	PS/PSW	IT/TTE	D/DE	T/TE	U/UE	DP/DPE	TP/TPE	UP/UPE
1	0.0000	0.0000	1.0000	.6952	.2558	3.9087	0.0000	1.0000	1.0000	1.0000
2	.0063	.0507	1.0000	.6963	.2556	3.9130	.0209	1.0000	1.0000	1.0000
3	.0089	.0758	1.0000	.6972	.2554	3.9158	.0312	1.0000	1.0000	1.0000
4	.0216	.1361	1.0000	.6981	.2557	3.9107	.0560	1.0000	1.0000	1.0000
5	.0267	.1660	1.0000	.6976	.2563	3.9010	.0682	1.0000	1.0000	1.0000
6	.0343	.1895	1.0000	.6988	.2564	3.9008	.0778	1.0000	1.0000	1.0000
7	.0444	.2523	1.0000	.7017	.2567	3.8960	.1036	1.0000	1.0000	1.0000
8	.0572	.3368	1.0000	.7067	.2574	3.8854	.1381	1.0000	1.0000	1.0000
9	.0698	.4546	1.0000	.7120	.2601	3.8446	.1854	1.0000	1.0000	1.0000
10	.0775	.5218	1.0000	.7176	.2614	3.8262	.2123	1.0000	1.0000	1.0000
11	.0876	.5976	1.0000	.7185	.2652	3.7707	.2414	1.0000	1.0000	1.0000
12	.0953	.6449	1.0000	.7221	.2668	3.7482	.2597	1.0000	1.0000	1.0000
13	.1029	.7048	1.0000	.7279	.2686	3.7227	.2829	1.0000	1.0000	1.0000
14	.1080	.7458	1.0000	.7305	.2706	3.6959	.2982	1.0000	1.0000	1.0000
15	.1156	.7900	1.0000	.7333	.2728	3.6653	.3146	1.0000	1.0000	1.0000
16	.1410	.9645	1.0000	.7429	.2839	3.5219	.3765	1.0000	1.0000	1.0000
17	.1689	1.1011	1.0000	.7481	.2954	3.3854	.4214	1.0000	1.0000	1.0000
18	.1892	1.1959	1.0000	.7531	.3037	3.2927	.4514	1.0000	1.0000	1.0000
19	.2172	1.2730	1.0000	.7604	.3097	3.2290	.4758	1.0000	1.0000	1.0000
20	.2502	1.3695	1.0000	.7675	.3187	3.1382	.5046	1.0000	1.0000	1.0000
21	.3086	1.5044	1.0000	.7761	.3329	3.0041	.5423	1.0000	1.0000	1.0000
22	.5601	1.7715	1.0000	.7915	.3657	2.7343	.6093	1.0000	1.0000	1.0000
23	.7963	1.9327	1.0000	.7968	.3900	2.5643	.6438	1.0000	1.0000	1.0000
24	1.0884	2.1037	1.0000	.8011	.4185	2.3895	.6764	1.0000	1.0000	1.0000
25	1.3398	2.2496	1.0000	.8093	.4422	2.2613	.7037	1.0000	1.0000	1.0000
26	1.5761	2.3858	1.0000	.8171	.4655	2.1484	.7274	1.0000	1.0000	1.0000
27	1.8428	2.5188	1.0000	.8260	.4885	2.0471	.7496	1.0000	1.0000	1.0000
28	2.0993	2.6760	1.0000	.8348	.5182	1.9298	.7732	1.0000	1.0000	1.0000
29	2.3101	2.8122	1.0000	.8410	.5460	1.8316	.7916	1.0000	1.0000	1.0000
30	2.5413	2.9512	1.0000	.8500	.5737	1.7431	.8105	1.0000	1.0000	1.0000
31	2.9248	3.2038	1.0000	.8635	.6288	1.5903	.8404	1.0000	1.0000	1.0000
32	3.3947	3.5092	1.0000	.8774	.7019	1.4246	.8712	1.0000	1.0000	1.0000
33	3.9865	3.8708	1.0000	.8938	.7953	1.2574	.9028	1.0000	1.0000	1.0000
34	4.5148	4.1457	1.0000	.9072	.8699	1.1496	.9246	1.0000	1.0000	1.0000
35	5.1321	4.3730	1.0000	.9242	.9284	1.0771	.9440	1.0000	1.0000	1.0000
36	5.5258	4.4842	1.0000	.9334	.9568	1.0452	.9535	1.0000	1.0000	1.0000
37	6.2090	4.6293	1.0000	.9512	.9883	1.0118	.9686	1.0000	1.0000	1.0000
38	6.6078	4.6830	1.0000	.9594	.9985	1.0015	.9748	1.0000	1.0000	1.0000
39	7.1514	4.7353	1.0000	.9702	1.0055	.9946	.9823	1.0000	1.0000	1.0000
40	7.7026	4.7721	1.0000	.9801	1.0079	.9921	.9887	1.0000	1.0000	1.0000
41	8.2690	4.7946	1.0000	.9883	1.0073	.9927	.9937	1.0000	1.0000	1.0000
* 42	8.9700	4.8096	1.0000	.9960	1.0048	.9953	.9980	1.0000	1.0000	1.0000
** 43	9.5085	4.8076	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
44	10.2400	4.7988	1.0000	1.0054	.9916	1.0085	1.0024	1.0000	1.0000	1.0000



TABLE 5 NOL BOUNDARY LAYER CHANNEL PROFILE DATA  
RUN NO 1141

STA = 2.210E+00 M ME = 4.905E+00 MPW = 4.913E+00 DELP = 7.131E+00 CM  
 PO = 5.156E+05 N/M2 DE = 5.209E-02 KG/M3 DPW = 5.209E-02 KG/M3 DSTRP = 2.154E+00 CM  
 TO = 4.232E+02 DEG.K TE = 7.281E+01 DEG.K TPW = 7.281E+01 DEG.K THP = 3.220E-01 CM  
 PSW = 1.080E+03 N/M2 UE = 8.391E+02 M/S UPW = 8.391E+02 M/S THEP = 5.849E-01 CM  
 TW = 2.999E+02 DEG.K RE = 8.836E+06 1/M RPW = 8.836E+06 1/M THMP = 2.587E-01 CM

N	Y (CM)	M	PS/PSW	IT/TTE	D/DE	T/TE	U/UE	DP/DPE	TP/TPE	UP/UPE
1	0.0000	0.0000	1.0000	.7086	.2428	4.1191	0.0000	1.0000	1.0000	1.0000
2	.0063	.1755	1.0000	.7164	.2416	4.1388	.0728	1.0000	1.0000	1.0000
3	.0140	.3050	1.0000	.7227	.2425	4.1243	.1263	1.0000	1.0000	1.0000
4	.0191	.3982	1.0000	.7301	.2431	4.1133	.1646	1.0000	1.0000	1.0000
5	.0241	.4527	1.0000	.7338	.2441	4.0973	.1868	1.0000	1.0000	1.0000
6	.0292	.6002	1.0000	.7406	.2490	4.0156	.2452	1.0000	1.0000	1.0000
7	.0394	.7699	1.0000	.7538	.2553	3.9174	.3106	1.0000	1.0000	1.0000
8	.0470	.9002	1.0000	.7655	.2612	3.8291	.3591	1.0000	1.0000	1.0000
9	.0597	1.0823	1.0000	.7756	.2738	3.6525	.4217	1.0000	1.0000	1.0000
10	.0825	1.2730	1.0000	.7869	.2895	3.4542	.4823	1.0000	1.0000	1.0000
11	.1080	1.3914	1.0000	.7927	.3011	3.3214	.5169	1.0000	1.0000	1.0000
12	.1334	1.4698	1.0000	.7969	.3092	3.2346	.5389	1.0000	1.0000	1.0000
13	.1613	1.5198	1.0000	.8004	.3142	3.1823	.5527	1.0000	1.0000	1.0000
14	.1841	1.5582	1.0000	.8018	.3187	3.1373	.5626	1.0000	1.0000	1.0000
15	.2121	1.5930	1.0000	.8040	.3226	3.1000	.5718	1.0000	1.0000	1.0000
16	.2349	1.6255	1.0000	.8052	.3266	3.0621	.5799	1.0000	1.0000	1.0000
17	.2807	1.6710	1.0000	.8080	.3318	3.0137	.5914	1.0000	1.0000	1.0000
18	.5270	1.8955	1.0000	.8246	.3585	2.7892	.6453	1.0000	1.0000	1.0000
19	.7785	2.0954	1.0000	.8387	.3852	2.5959	.6882	1.0000	1.0000	1.0000
20	1.0401	2.2909	1.0000	.8528	.4135	2.4185	.7263	1.0000	1.0000	1.0000
21	1.2865	2.4735	1.0000	.8633	.4431	2.2566	.7575	1.0000	1.0000	1.0000
22	1.5354	2.6631	1.0000	.8751	.4754	2.1033	.7873	1.0000	1.0000	1.0000
23	1.8072	2.8874	1.0000	.8867	.5175	1.9324	.8182	1.0000	1.0000	1.0000
24	2.0434	3.0958	1.0000	.8966	.5596	1.7869	.8436	1.0000	1.0000	1.0000
25	2.3076	3.3100	1.0000	.9070	.6053	1.6521	.8673	1.0000	1.0000	1.0000
26	2.5565	3.5151	1.0000	.9137	.6536	1.5300	.8864	1.0000	1.0000	1.0000
27	3.0493	3.9239	1.0000	.9275	.7566	1.3217	.9196	1.0000	1.0000	1.0000
28	3.5751	4.2668	1.0000	.9403	.8491	1.1777	.9439	1.0000	1.0000	1.0000
29	4.0856	4.5026	1.0000	.9480	.9173	1.0902	.9584	1.0000	1.0000	1.0000
30	4.5885	4.6550	1.0000	.9560	.9599	1.0418	.9686	1.0000	1.0000	1.0000
31	5.0889	4.7820	1.0000	.9681	.9904	1.0097	.9795	1.0000	1.0000	1.0000
32	5.6096	4.8516	1.0000	.9775	1.0045	.9955	.9868	1.0000	1.0000	1.0000
33	6.0846	4.8969	1.0000	.9858	1.0115	.9887	.9926	1.0000	1.0000	1.0000
34	6.6053	4.8833	1.0000	.9905	1.0020	.9980	.9945	1.0000	1.0000	1.0000
* 35	7.1311	4.8960	1.0000	.9952	1.0016	.9984	.9973	1.0000	1.0000	1.0000
36	7.6390	4.9029	1.0000	.9979	1.0012	.9988	.9989	1.0000	1.0000	1.0000
** 37	8.1394	4.9055	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
38	8.6500	4.9067	1.0000	1.0051	.9953	1.0047	1.0026	1.0000	1.0000	1.0000
39	9.1580	4.9036	1.0000	1.0036	.9958	1.0042	1.0017	1.0000	1.0000	1.0000
40	9.6380	4.8947	1.0000	1.0048	.9916	1.0084	1.0020	1.0000	1.0000	1.0000
41	10.1638	4.8938	1.0000	1.0061	.9901	1.0100	1.0026	1.0000	1.0000	1.0000

TABLE 5 NOL BOUNDARY LAYER CHANNEL PROFILE DATA  
RUN NO 1261

STA = 2.210E+00 M ME = 4.836E+00 MPW = 4.816E+00 DELP = 8.635E+00 CM  
 PO = 1.028E+05 N/M2 DE = 1.120E-02 KG/M3 DPW = 1.120E-02 KG/M3 DSTRP = 2.756E+00 CM  
 TO = 4.227E+02 DEG.K TE = 7.446E+01 DEG.K TPW = 7.446E+01 DEG.K THP = 4.913E-01 CM  
 PSW = 2.415E+02 N/M2 UE = 8.365E+02 M/S UPW = 8.365E+02 M/S THEP = 8.852E-01 CM  
 TW = 2.925E+02 DEG.K RE = 1.848E+06 1/M RPW = 1.848E+06 1/M TMHP = 4.672E-01 CM

N	Y (CM)	M	PS/PSW	TT/TTE	D/DE	T/TE	U/UE	DP/DPE	TP/TPE	UP/UPE
1	0.0000	0.0000	1.0000	.6920	.2545	3.9290	0.0000	1.0000	1.0000	1.0000
2	.0063	.0696	1.0000	.6940	.2541	3.9362	.0285	1.0000	1.0000	1.0000
3	.0089	.0886	1.0000	.6919	.2550	3.9223	.0363	1.0000	1.0000	1.0000
4	.0114	.1127	1.0000	.6915	.2553	3.9164	.0461	1.0000	1.0000	1.0000
5	.0191	.1492	1.0000	.6923	.2556	3.9131	.0610	1.0000	1.0000	1.0000
6	.0267	.1900	1.0000	.6956	.2550	3.9212	.0778	1.0000	1.0000	1.0000
7	.0292	.2135	1.0000	.6975	.2548	3.9244	.0875	1.0000	1.0000	1.0000
8	.0368	.2526	1.0000	.6990	.2552	3.9184	.1034	1.0000	1.0000	1.0000
9	.0419	.2948	1.0000	.6982	.2566	3.8966	.1203	1.0000	1.0000	1.0000
10	.0495	.3340	1.0000	.7008	.2569	3.8921	.1363	1.0000	1.0000	1.0000
11	.0597	.4020	1.0000	.7066	.2573	3.8863	.1639	1.0000	1.0000	1.0000
12	.0825	.5865	1.0000	.7175	.2624	3.8115	.2368	1.0000	1.0000	1.0000
13	.1054	.7668	1.0000	.7211	.2730	3.6632	.3035	1.0000	1.0000	1.0000
14	.1334	.9429	1.0000	.7319	.2835	3.5279	.3662	1.0000	1.0000	1.0000
15	.1537	1.0535	1.0000	.7393	.2911	3.4351	.4038	1.0000	1.0000	1.0000
16	.1841	1.1719	1.0000	.7497	.2995	3.3394	.4428	1.0000	1.0000	1.0000
17	.2096	1.2599	1.0000	.7525	.3084	3.2429	.4692	1.0000	1.0000	1.0000
18	.2324	1.3261	1.0000	.7571	.3144	3.1803	.4890	1.0000	1.0000	1.0000
19	.2730	1.4210	1.0000	.7641	.3236	3.0901	.5165	1.0000	1.0000	1.0000
20	.5270	1.7353	1.0000	.7834	.3603	2.7758	.5978	1.0000	1.0000	1.0000
21	.7836	1.8980	1.0000	.7903	.3834	2.6081	.6338	1.0000	1.0000	1.0000
22	1.0223	2.0385	1.0000	.7967	.4048	2.4704	.6625	1.0000	1.0000	1.0000
23	1.2865	2.1812	1.0000	.8024	.4284	2.3343	.6891	1.0000	1.0000	1.0000
24	1.5456	2.3274	1.0000	.8099	.4531	2.2071	.7150	1.0000	1.0000	1.0000
25	1.7996	2.4762	1.0000	.8209	.4777	2.0934	.7403	1.0000	1.0000	1.0000
26	2.0587	2.6295	1.0000	.8295	.5060	1.9764	.7644	1.0000	1.0000	1.0000
27	2.3000	2.7728	1.0000	.8383	.5332	1.8756	.7852	1.0000	1.0000	1.0000
28	2.5819	2.9403	1.0000	.8471	.5675	1.7623	.8071	1.0000	1.0000	1.0000
29	3.0848	3.2612	1.0000	.8639	.6376	1.5685	.8445	1.0000	1.0000	1.0000
30	3.5649	3.5767	1.0000	.8758	.7157	1.3973	.8743	1.0000	1.0000	1.0000
31	4.0627	3.9003	1.0000	.8921	.7981	1.2529	.9027	1.0000	1.0000	1.0000
32	4.5910	4.1849	1.0000	.9072	.8741	1.1440	.9255	1.0000	1.0000	1.0000
33	5.0914	4.3863	1.0000	.9180	.9302	1.0751	.9404	1.0000	1.0000	1.0000
34	5.6350	4.5464	1.0000	.9334	.9688	1.0322	.9551	1.0000	1.0000	1.0000
35	6.1201	4.6414	1.0000	.9440	.9905	1.0096	.9643	1.0000	1.0000	1.0000
36	6.6393	4.7196	1.0000	.9565	1.0045	.9956	.9737	1.0000	1.0000	1.0000
37	7.1590	4.7722	1.0000	.9672	1.0116	.9886	.9811	1.0000	1.0000	1.0000
38	7.6467	4.8040	1.0000	.9769	1.0124	.9877	.9872	1.0000	1.0000	1.0000
39	8.1191	4.8251	1.0000	.9839	1.0125	.9876	.9915	1.0000	1.0000	1.0000
40	8.6347	4.8354	1.0000	.9920	1.0078	.9922	.9960	1.0000	1.0000	1.0000
41	9.1834	4.8364	1.0000	.9984	1.0017	.9983	.9992	1.0000	1.0000	1.0000
42	9.6380	4.8361	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
43	10.1790	4.8358	1.0000	1.0023	.9976	1.0024	1.0011	1.0000	1.0000	1.0000

TABLE 5 NOL BOUNDARY LAYER CHANNEL PROFILE DATA  
RUN NO 2121

STA = 1.905E+00 M	ME = 4.891E+00	MPW = 4.892E+00	DELP = 6.034E+00 CM
PO = 1.035E+06 N/M2	DE = 1.048E-01 KG/M3	DPW = 1.048E-01 KG/M3	DSTRP = 1.661E+00 CM
TO = 4.285E+02 DEG.K	TE = 7.408E+01 DEG.K	TPW = 7.408E+01 DEG.K	THP = 2.820E-01 CM
PSW = 2.221E+03 N/M2	UE = 8.438E+02 M/S	UPW = 8.438E+02 M/S	THEP = 5.109E-01 CM
TW = 9.262E+01 DEG.K	RE = 1.754E+07 1/M	RPW = 1.754E+07 1/M	THHP = 2.433E-01 CM

N	Y(CM)	M	PS/PSW	IT/TTE	D/DE	T/TE	U/UE	DP/DPE	TP/TPE	UP/UPE
1	0.0000	0.0000	1.0000	.2161	.7998	1.2502	0.0000	1.0000	1.0000	1.0000
2	.0063	.7971	1.0000	.3825	.5094	1.9630	.2283	1.0000	1.0000	1.0000
3	.0140	1.2509	1.0000	.4979	.4559	2.1935	.3788	1.0000	1.0000	1.0000
4	.0419	1.6926	1.0000	.6093	.4463	2.2405	.5180	1.0000	1.0000	1.0000
5	.0622	1.8038	1.0000	.6354	.4491	2.2266	.5503	1.0000	1.0000	1.0000
6	.0902	1.8507	1.0000	.6453	.4514	2.2152	.5632	1.0000	1.0000	1.0000
7	.1130	1.8823	1.0000	.6503	.4542	2.2016	.5710	1.0000	1.0000	1.0000
8	.1384	1.9195	1.0000	.6580	.4564	2.1912	.5809	1.0000	1.0000	1.0000
9	.1664	1.9649	1.0000	.6689	.4580	2.1832	.5936	1.0000	1.0000	1.0000
10	.1966	1.9967	1.0000	.6779	.4583	2.1818	.6030	1.0000	1.0000	1.0000
11	.2245	2.0317	1.0000	.6857	.4603	2.1725	.6123	1.0000	1.0000	1.0000
12	.4760	2.2895	1.0000	.7351	.4817	2.0759	.6745	1.0000	1.0000	1.0000
13	.7272	2.5192	1.0000	.7764	.5053	1.9791	.7246	1.0000	1.0000	1.0000
14	.9809	2.7519	1.0000	.8139	.5341	1.8722	.7699	1.0000	1.0000	1.0000
15	1.2423	2.9764	1.0000	.8464	.5662	1.7663	.8088	1.0000	1.0000	1.0000
16	1.4938	3.1875	1.0000	.8732	.6003	1.6659	.8412	1.0000	1.0000	1.0000
17	1.6789	3.3543	1.0000	.8917	.6301	1.5870	.8640	1.0000	1.0000	1.0000
18	2.0038	3.6210	1.0000	.9188	.6816	1.4672	.8968	1.0000	1.0000	1.0000
19	2.2245	3.7969	1.0000	.9334	.7192	1.3904	.9154	1.0000	1.0000	1.0000
20	2.2245	3.7980	1.0000	.9338	.7192	1.3904	.9156	1.0000	1.0000	1.0000
21	2.4379	3.9474	1.0000	.9434	.7543	1.3257	.9293	1.0000	1.0000	1.0000
22	3.0089	4.2622	1.0000	.9589	.8353	1.1972	.9535	1.0000	1.0000	1.0000
23	3.4836	4.4496	1.0000	.9679	.8859	1.1288	.9666	1.0000	1.0000	1.0000
24	4.0317	4.6333	1.0000	.9751	.9385	1.0656	.9779	1.0000	1.0000	1.0000
25	4.4734	4.7627	1.0000	.9812	.9755	1.0251	.9859	1.0000	1.0000	1.0000
26	5.0495	4.8151	1.0000	.9868	.9875	1.0126	.9907	1.0000	1.0000	1.0000
27	5.5090	4.8494	1.0000	.9898	.9962	1.0039	.9934	1.0000	1.0000	1.0000
* 28	6.0343	4.8539	1.0000	.9943	.9931	1.0069	.9958	1.0000	1.0000	1.0000
29	6.4938	4.8639	1.0000	.9967	.9941	1.0059	.9974	1.0000	1.0000	1.0000
30	6.9936	4.8688	1.0000	.9978	.9946	1.0054	.9981	1.0000	1.0000	1.0000
** 31	7.6131	4.8910	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
32	8.0851	4.9210	1.0000	1.0015	1.0086	.9914	1.0018	1.0000	1.0000	1.0000
33	8.5623	4.8870	1.0000	1.0014	.9972	1.0028	1.0006	1.0000	1.0000	1.0000
34	9.1181	4.8854	1.0000	1.0021	.9960	1.0040	1.0009	1.0000	1.0000	1.0000
35	9.5623	4.9076	1.0000	1.0025	1.0031	.9969	1.0018	1.0000	1.0000	1.0000
36	10.1079	4.9069	1.0000	1.0042	1.0012	.9988	1.0027	1.0000	1.0000	1.0000

TABLE 5 NOL BOUNDARY LAYER CHANNEL PROFILE DATA  
RUN NO 2122

STA = 1.905E+00 M	ME = 4.911E+00	MPW = 4.898E+00	DELP = 7.080E+00 CM
PO = 5.186E+05 N/M2	DE = 5.007E-02 KG/M3	DPW = 5.007E-02 KG/M3	DSTRP = 1.793E+00 CM
TO = 4.514E+02 DEG.K	TE = 7.752E+01 DEG.K	TPW = 7.752E+01 DEG.K	THP = 3.720E-01 CM
PSW = 1.105E+03 N/M2	UE = 8.667E+02 M/S	Upw = 8.667E+02 M/S	THEP = 6.643E-01 CM
TW = 8.704E+01 DEG.K	RE = 8.191E+06 1/M	RPW = 8.191E+06 1/M	THHP = 3.799E-01 CM

N	Y(CM)	M	PS/PSW	IT/TTE	D/DE	T/TE	U/UE	DP/DPE	TP/TPE	UP/UPE
1	0.0000	0.0000	1.0000	.1928	.8906	1.1228	0.0000	1.0000	1.0000	1.0000
2	.0063	.6281	1.0000	.2843	.6518	1.5342	.1584	1.0000	1.0000	1.0000
3	.0140	.9100	1.0000	.3370	.5941	1.6833	.2404	1.0000	1.0000	1.0000
4	.0394	1.5665	1.0000	.4771	.5366	1.8636	.4355	1.0000	1.0000	1.0000
5	.0648	1.7482	1.0000	.5175	.5348	1.8700	.4868	1.0000	1.0000	1.0000
6	.0902	1.8076	1.0000	.5308	.5350	1.8692	.5033	1.0000	1.0000	1.0000
7	.1130	1.8367	1.0000	.5375	.5351	1.8686	.5113	1.0000	1.0000	1.0000
8	.1359	1.8621	1.0000	.5435	.5351	1.8688	.5184	1.0000	1.0000	1.0000
9	.1638	1.8968	1.0000	.5556	.5315	1.8813	.5298	1.0000	1.0000	1.0000
10	.1915	1.9254	1.0000	.5666	.5278	1.8946	.5397	1.0000	1.0000	1.0000
11	.2144	1.9547	1.0000	.5746	.5273	1.8966	.5482	1.0000	1.0000	1.0000
12	.4912	2.2215	1.0000	.6423	.5313	1.8820	.6206	1.0000	1.0000	1.0000
13	.7424	2.4383	1.0000	.6909	.5442	1.8376	.6731	1.0000	1.0000	1.0000
14	.9936	2.6460	1.0000	.7334	.5620	1.7792	.7187	1.0000	1.0000	1.0000
15	1.2118	2.8197	1.0000	.7683	.5790	1.7270	.7546	1.0000	1.0000	1.0000
16	1.4989	3.0389	1.0000	.8077	.6054	1.6519	.7954	1.0000	1.0000	1.0000
17	1.7501	3.2340	1.0000	.8388	.6330	1.5797	.8278	1.0000	1.0000	1.0000
18	1.9886	3.4154	1.0000	.8648	.6619	1.5108	.8549	1.0000	1.0000	1.0000
19	2.2652	3.6291	1.0000	.8906	.7008	1.4269	.8828	1.0000	1.0000	1.0000
20	2.4938	3.7952	1.0000	.9068	.7350	1.3605	.9015	1.0000	1.0000	1.0000
21	3.0190	4.1309	1.0000	.9309	.8141	1.2283	.9323	1.0000	1.0000	1.0000
22	3.5065	4.3536	1.0000	.9439	.8717	1.1471	.9496	1.0000	1.0000	1.0000
23	4.0267	4.5680	1.0000	.9547	.9306	1.0746	.9643	1.0000	1.0000	1.0000
24	4.5344	4.7307	1.0000	.9658	.9737	1.0270	.9763	1.0000	1.0000	1.0000
25	5.0089	4.7768	1.0000	.9743	.9807	1.0197	.9823	1.0000	1.0000	1.0000
26	5.5446	4.8340	1.0000	.9816	.9927	1.0074	.9881	1.0000	1.0000	1.0000
27	6.0546	4.8608	1.0000	.9865	.9967	1.0033	.9915	1.0000	1.0000	1.0000
28	6.5674	4.8842	1.0000	.9912	.9999	1.0001	.9947	1.0000	1.0000	1.0000
* 29	7.0800	4.8938	1.0000	.9952	.9992	1.0008	.9970	1.0000	1.0000	1.0000
30	7.5801	4.9151	1.0000	.9976	1.0040	.9960	.9990	1.0000	1.0000	1.0000
** 31	8.0978	4.9105	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
32	8.5954	4.8803	1.0000	1.0015	.9884	1.0118	.9997	1.0000	1.0000	1.0000
33	9.1029	4.9016	1.0000	1.0027	.9943	1.0057	1.0010	1.0000	1.0000	1.0000
34	9.5496	4.9289	1.0000	1.0031	1.0031	.9969	1.0022	1.0000	1.0000	1.0000
35	10.3086	4.9201	1.0000	1.0043	.9990	1.0010	1.0025	1.0000	1.0000	1.0000

TABLE 5 NOL BOUNDARY LAYER CHANNEL PROFILE DATA  
RUN NO 2123

STA = 1.905E+00 M ME = 4.822E+00 MPW = 4.847E+00 DELP = 8.085E+00 CM  
 PO = 1.033E+05 N/M2 DE = 1.076E-02 KG/M3 DPW = 1.076E-02 KG/M3 OSTRP = 2.050E+00 CM  
 TO = 4.264E+02 DEG.K TE = 7.546E+01 DEG.K TPW = 7.546E+01 DEG.K THP = 5.313E-01 CM  
 PSW = 2.339E+02 N/M2 UE = 8.397E+02 M/S UPW = 8.397E+02 M/S THEP = 9.474E-01 CM  
 TW = 8.543E+01 DEG.K RE = 1.756E+06 1/M RPW = 1.756E+06 1/M THMP = 6.060E-01 CM

N	Y(CM)	M	PS/PSW	T/TTE	D/DE	T/TE	U/UE	DP/DPE	TP/TPE	UP/UPE
1	0.0000	0.0000	1.0000	.2003	.8833	1.1322	0.0000	1.0000	1.0000	1.0000
2	.0063	.4063	1.0000	.2564	.7128	1.4028	.0998	1.0000	1.0000	1.0000
3	.0114	.4750	1.0000	.2676	.6911	1.4470	.1185	1.0000	1.0000	1.0000
4	.0368	.9330	1.0000	.3504	.5929	1.6867	.2513	1.0000	1.0000	1.0000
5	.0622	1.2377	1.0000	.4144	.5579	1.7926	.3436	1.0000	1.0000	1.0000
6	.0902	1.5416	1.0000	.4841	.5393	1.8542	.4353	1.0000	1.0000	1.0000
7	.1130	1.6716	1.0000	.5138	.5368	1.8628	.4731	1.0000	1.0000	1.0000
8	.1410	1.7965	1.0000	.5438	.5354	1.8676	.5091	1.0000	1.0000	1.0000
9	.1664	1.8492	1.0000	.5548	.5371	1.8619	.5232	1.0000	1.0000	1.0000
10	.1966	1.9045	1.0000	.5626	.5427	1.8427	.5361	1.0000	1.0000	1.0000
11	.2118	1.9260	1.0000	.5661	.5445	1.8366	.5413	1.0000	1.0000	1.0000
12	.2481	2.1609	1.0000	.6148	.5566	1.7966	.6006	1.0000	1.0000	1.0000
13	.2722	2.3375	1.0000	.6471	.5723	1.7472	.6407	1.0000	1.0000	1.0000
14	.2983	2.5074	1.0000	.6767	.5903	1.6942	.6768	1.0000	1.0000	1.0000
15	1.2271	2.6720	1.0000	.7030	.6112	1.6362	.7087	1.0000	1.0000	1.0000
16	1.4887	2.8360	1.0000	.7260	.6358	1.5729	.7375	1.0000	1.0000	1.0000
17	1.7501	2.9956	1.0000	.7506	.6589	1.5178	.7653	1.0000	1.0000	1.0000
18	2.0114	3.1608	1.0000	.7763	.6834	1.4632	.7928	1.0000	1.0000	1.0000
19	2.2550	3.3137	1.0000	.7990	.7079	1.4126	.8167	1.0000	1.0000	1.0000
20	2.5039	3.4637	1.0000	.8175	.7359	1.3590	.8373	1.0000	1.0000	1.0000
21	3.0089	3.7513	1.0000	.8549	.7904	1.2652	.8750	1.0000	1.0000	1.0000
22	3.5344	4.0126	1.0000	.8871	.8418	1.1880	.9069	1.0000	1.0000	1.0000
23	4.0165	4.2133	1.0000	.9092	.8857	1.1291	.9284	1.0000	1.0000	1.0000
24	4.5242	4.4032	1.0000	.9263	.9335	1.0712	.9461	1.0000	1.0000	1.0000
25	5.0292	4.5163	1.0000	.9400	.9563	1.0457	.9577	1.0000	1.0000	1.0000
26	5.5395	4.6060	1.0000	.9522	.9743	1.0263	.9676	1.0000	1.0000	1.0000
27	6.0495	4.6815	1.0000	.9635	.9888	1.0113	.9763	1.0000	1.0000	1.0000
28	6.5725	4.7264	1.0000	.9728	.9946	1.0054	.9827	1.0000	1.0000	1.0000
29	7.0825	4.7688	1.0000	.9806	1.0012	.9988	.9883	1.0000	1.0000	1.0000
30	7.5725	4.7929	1.0000	.9864	1.0036	.9964	.9921	1.0000	1.0000	1.0000
* 31	8.0851	4.8125	1.0000	.9919	1.0048	.9952	.9956	1.0000	1.0000	1.0000
32	8.6004	4.8218	1.0000	.9969	1.0029	.9971	.9984	1.0000	1.0000	1.0000
** 33	9.1054	4.8224	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
34	9.5700	4.8435	1.0000	1.0012	1.0060	.9940	1.0014	1.0000	1.0000	1.0000

TABLE 5 NOL BOUNDARY LAYER CHANNEL PROFILE DATA  
RUN NO 2131

STA = 2.057E+00 M	ME = 4.858E+00	MPW = 4.901E+00	DELP = 6.059E+00 CM
PO = 1.038E+06 N/M2	DE = 1.075E-01 KG/M3	DPW = 1.050E-01 KG/M3	DSTRP = 1.726E+00 CM
TO = 4.249E+02 DEG.K	TE = 7.429E+01 DEG.K	TPW = 7.360E+01 DEG.K	THP = 2.869E-01 CM
PSW = 2.204E+03 N/M2	UE = 8.393E+02 M/S	UPW = 8.402E+02 M/S	THEP = 5.188E-01 CM
TW = 1.043E+02 DEG.K	RE = 1.784E+07 1/M	RPW = 1.763E+07 1/M	THHP = 2.422E-01 CM

N	Y (CM)	M	PS/PSW	IT/TTE	D/DE	T/TE	U/UE	DP/DPE	TP/TPE	UP/UPE
1	0.0000	0.0000	1.0000	.2454	.6895	1.4034	0.0000	.9768	.9907	1.0010
2	.0063	.7432	1.0000	.3950	.4757	2.0344	.2182	.9760	.9907	1.0010
3	.0114	.9307	1.0000	.4397	.4514	2.1438	.2805	.9768	.9907	1.0010
4	.0165	1.1907	1.0000	.5045	.4305	2.2480	.3675	.9768	.9907	1.0010
5	.0216	1.3957	1.0000	.5554	.4233	2.2861	.4344	.9768	.9907	1.0010
6	.0521	1.7156	1.0000	.6324	.4250	2.2768	.5329	.9768	.9907	1.0010
7	.0724	1.7842	1.0000	.6469	.4281	2.2608	.5523	.9768	.9907	1.0010
8	.1029	1.8254	1.0000	.6553	.4302	2.2493	.5636	.9768	.9907	1.0010
9	.1232	1.8635	1.0000	.6626	.4327	2.2365	.5737	.9768	.9907	1.0010
10	.1486	1.8937	1.0000	.6686	.4346	2.2269	.5817	.9768	.9907	1.0010
11	.1765	1.9435	1.0000	.6779	.4381	2.2088	.5946	.9768	.9907	1.0010
12	.1994	1.9681	1.0000	.6843	.4388	2.2053	.6016	.9768	.9907	1.0010
13	.2451	2.0162	1.0000	.6949	.4414	2.1922	.6145	.9768	.9907	1.0010
14	.4887	2.2580	1.0000	.7385	.4628	2.0912	.6722	.9768	.9907	1.0010
15	.7427	2.4841	1.0000	.7762	.4870	1.9870	.7208	.9768	.9907	1.0010
16	.9990	2.7095	1.0000	.8121	.5143	1.8818	.7651	.9768	.9907	1.0010
17	1.2581	2.9275	1.0000	.8440	.5441	1.7786	.8037	.9768	.9907	1.0010
18	1.5067	3.1217	1.0000	.8683	.5746	1.6841	.8340	.9768	.9907	1.0010
19	1.7480	3.3188	1.0000	.8905	.6086	1.5902	.8615	.9768	.9907	1.0010
20	1.9967	3.5208	1.0000	.9110	.6462	1.4977	.8870	.9768	.9907	1.0010
21	2.2685	3.7380	1.0000	.9299	.6904	1.4017	.9110	.9768	.9907	1.0010
22	2.5197	3.9163	1.0000	.9424	.7303	1.3251	.9280	.9768	.9907	1.0010
23	3.0020	4.2203	1.0034	.9581	.8084	1.2012	.9522	.9792	.9916	1.0009
24	3.5199	4.4483	1.0072	.9677	.8730	1.1165	.9676	.9819	.9927	1.0008
25	4.0582	4.5986	1.0111	.9761	.9166	1.0675	.9781	.9846	.9938	1.0007
26	4.5481	4.7130	1.0147	.9822	.9513	1.0322	.9857	.9871	.9948	1.0005
27	5.0356	4.7874	1.0183	.9869	.9748	1.0109	.9909	.9896	.9958	1.0004
28	5.5306	4.8246	1.0219	.9916	.9862	1.0028	.9946	.9921	.9968	1.0003
* 29	6.0587	4.8547	1.0258	.9950	.9967	.9960	.9974	.9948	.9979	1.0002
30	6.6248	4.8540	1.0300	.9983	.9971	.9996	.9990	.9977	.9991	1.0001
** 31	7.0843	4.8578	1.0333	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
32	7.6530	4.8848	1.0375	1.0013	1.0120	.9921	1.0016	1.0029	1.0012	.9999
33	8.0922	4.8689	1.0407	1.0023	1.0086	.9985	1.0016	1.0051	1.0020	.9998
34	8.6050	4.8698	1.0394	1.0035	1.0064	.9994	1.0022	1.0042	1.0017	.9998
35	9.1280	4.8692	1.0403	1.0040	1.0066	1.0001	1.0024	1.0048	1.0019	.9998
36	9.5951	4.8683	1.0413	1.0047	1.0066	1.0011	1.0027	1.0055	1.0022	.9998
37	10.1765	4.8674	1.0424	1.0055	1.0065	1.0022	1.0031	1.0062	1.0025	.9997

TABLE 5 NOL BOUNDARY LAYER CHANNEL PROFILE DATA  
RUN NO 2132

STA = 2.057E+00 M ME = 4.903E+00 MPW = 4.937E+00 DELP = 7.100E+00 CM  
 PO = 5.148E+05 N/M2 DE = 5.208E-02 KG/M3 DPW = 5.055E-02 KG/M3 DSTRP = 1.840E+00 CM  
 TO = 4.261E+02 DEG.K TE = 7.336E+01 DEG.K TPW = 7.249E+01 DEG.K THP = 3.670E-01 CM  
 PSW = 1.048E+03 N/M2 UE = 8.418E+02 M/S UPW = 8.428E+02 M/S THEP = 6.611E-01 CM  
 TW = 9.401E+01 DEG.K RE = 8.790E+06 1/M RPW = 8.654E+06 1/M THMP = 3.691E-01 CM

N	Y (CM)	M	PS/PSW	IT/TTE	D/DE	T/TE	U/UE	DP/DPE	TP/TPE	UP/UPE
1	0.0000	0.0000	1.0000	.2206	.7483	1.2814	0.0000	.9705	.9881	1.0012
2	.0063	.5960	1.0000	.3220	.5492	1.7459	.1606	.9705	.9881	1.0012
3	.0063	.5968	1.0000	.3223	.5488	1.7472	.1609	.9705	.9881	1.0012
4	.0114	.7347	1.0000	.3508	.5216	1.8386	.2032	.9705	.9881	1.0012
5	.0165	.9641	1.0000	.4010	.4883	1.9637	.2756	.9705	.9881	1.0012
6	.0241	1.1780	1.0000	.4493	.4695	2.0425	.3434	.9705	.9881	1.0012
7	.0419	1.6106	1.0000	.5488	.4569	2.0988	.5959	.9705	.9881	1.0012
8	.0724	1.7736	1.0000	.5854	.4595	2.0869	.5226	.9705	.9881	1.0012
9	.1130	1.8545	1.0000	.6034	.4619	2.0763	.5450	.9705	.9881	1.0012
10	.1537	1.9004	1.0000	.6133	.4637	2.0683	.5574	.9705	.9881	1.0012
11	.1765	1.9308	1.0000	.6205	.4645	2.0643	.5658	.9705	.9881	1.0012
12	.2019	1.9606	1.0000	.6272	.4656	2.0596	.5739	.9705	.9881	1.0012
13	.2400	2.0121	1.0000	.6374	.4688	2.0455	.5869	.9705	.9881	1.0012
14	.4608	2.2315	1.0000	.6773	.4866	1.9707	.6389	.9705	.9881	1.0012
15	.7478	2.4695	1.0000	.7187	.5099	1.8805	.6907	.9705	.9881	1.0012
16	.9863	2.6681	1.0000	.7508	.5330	1.7990	.7299	.9705	.9881	1.0012
17	1.2022	2.8352	1.0000	.7776	.5537	1.7318	.7610	.9705	.9881	1.0012
18	1.5067	3.0594	1.0000	.8115	.5844	1.6410	.7993	.9705	.9881	1.0012
19	1.7658	3.2582	1.0000	.8384	.6151	1.5590	.8297	.9705	.9881	1.0012
20	2.0119	3.4475	1.0000	.8615	.6473	1.4816	.8559	.9705	.9881	1.0012
21	2.2609	3.6281	1.0000	.8824	.6797	1.4108	.8789	.9705	.9881	1.0012
22	2.5197	3.8107	1.0000	.9019	.7147	1.3417	.9003	.9705	.9881	1.0012
23	3.0249	4.1452	1.0037	.9287	.7917	1.2158	.9322	.9731	.9892	1.0011
24	3.5377	4.3934	1.0077	.9440	.8567	1.1280	.9517	.9758	.9903	1.0010
25	4.0455	4.5532	1.0116	.9566	.8986	1.0796	.9649	.9786	.9914	1.0009
26	4.5583	4.6723	1.0156	.9646	.9329	1.0440	.9737	.9813	.9925	1.0008
27	5.0609	4.7647	1.0195	.9729	.9586	1.0199	.9814	.9840	.9936	1.0007
28	5.5687	4.8300	1.0234	.9806	.9764	1.0051	.9876	.9867	.9947	1.0006
29	6.0510	4.8655	1.0271	.9864	.9860	.9989	.9918	.9893	.9957	1.0004
30	6.5816	4.8710	1.0312	.9915	.9866	1.0023	.9946	.9921	.9968	1.0003
31	7.0996	4.8767	1.0352	.9947	.9892	1.0035	.9964	.9948	.9979	1.0002
32	7.6225	4.9125	1.0393	.9986	1.0012	.9954	.9997	.9976	.9990	1.0001
33	8.0769	4.9030	1.0428	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
34	8.5796	4.8991	1.0473	1.0002	1.0030	1.0015	1.0000	1.0032	1.0013	.9999
35	9.1382	4.8943	1.0534	1.0011	1.0061	1.0041	1.0003	1.0073	1.0029	.9997
36	9.5951	4.8948	1.0527	1.0024	1.0043	1.0052	1.0009	1.0068	1.0027	.9997
37	10.1663	4.8947	1.0529	1.0029	1.0040	1.0057	1.0012	1.0069	1.0028	.9997

TABLE 5 NOL BOUNDARY LAYER CHANNEL PROFILE DATA  
RUN NO 2133

STA = 2.057E+00 M	ME = 4.836E+00	MPW = 4.842E+00	DELP = 8.074E+00 CM
PO = 1.032E+05 N/M2	DE = 1.109E-02 KG/M3	DPW = 1.109E-02 KG/M3	DSTRP = 2.173E+00 CM
TO = 4.234E+02 DEG.K	TE = 7.458E+01 DEG.K	TPW = 7.458E+01 DEG.K	THP = 5.359E-01 CM
PSW = 2.350E+02 N/M2	UE = 8.371E+02 M/S	UPW = 8.371E+02 M/S	THEP = 9.534E-01 CM
TW = 8.391E+01 DEG.K	RE = 1.828E+06 1/M	RPW = 1.828E+06 1/M	THHP = 5.975E-01 CM

N	Y(CM)	M	PS/PSW	IT/TTE	D/DE	T/TE	U/UE	DP/DPE	TP/TPE	UP/UPE
1	0.0000	0.0000	1.0000	.1982	.8887	1.1252	0.0000	1.0000	1.0000	1.0000
2	.0063	.3922	1.0000	.2550	.7120	1.4045	.0961	1.0000	1.0000	1.0000
3	.0114	.4842	1.0000	.2713	.6798	1.4710	.1214	1.0000	1.0000	1.0000
4	.0165	.5766	1.0000	.2886	.6511	1.5359	.1478	1.0000	1.0000	1.0000
5	.0368	.9363	1.0000	.3589	.5768	1.7336	.2549	1.0000	1.0000	1.0000
6	.0622	1.2999	1.0000	.4377	.5385	1.8570	.3663	1.0000	1.0000	1.0000
7	.0902	1.5471	1.0000	.4954	.5259	1.9017	.4412	1.0000	1.0000	1.0000
8	.1130	1.6859	1.0000	.5270	.5243	1.9074	.4815	1.0000	1.0000	1.0000
9	.1359	1.7631	1.0000	.5429	.5262	1.9003	.5026	1.0000	1.0000	1.0000
10	.1613	1.8278	1.0000	.5552	.5293	1.8892	.5195	1.0000	1.0000	1.0000
11	.1918	1.8741	1.0000	.5663	.5296	1.8884	.5326	1.0000	1.0000	1.0000
12	.2172	1.9116	1.0000	.5765	.5289	1.8906	.5436	1.0000	1.0000	1.0000
13	.24735	2.1231	1.0000	.6178	.5422	1.8443	.5962	1.0000	1.0000	1.0000
14	.7325	2.2987	1.0000	.6484	.5588	1.7896	.6359	1.0000	1.0000	1.0000
15	.9939	2.4689	1.0000	.6743	.5798	1.7248	.6705	1.0000	1.0000	1.0000
16	1.2352	2.6135	1.0000	.6968	.5981	1.6718	.6988	1.0000	1.0000	1.0000
17	1.4737	2.7524	1.0000	.7198	.6156	1.6245	.7255	1.0000	1.0000	1.0000
18	1.7506	2.9148	1.0000	.7449	.6383	1.5667	.7545	1.0000	1.0000	1.0000
19	1.9992	3.0603	1.0000	.7673	.6596	1.5161	.7792	1.0000	1.0000	1.0000
20	2.2609	3.2169	1.0000	.7908	.6838	1.4624	.8045	1.0000	1.0000	1.0000
21	2.4816	3.3389	1.0000	.8089	.7033	1.4218	.8233	1.0000	1.0000	1.0000
22	3.0274	3.6603	1.0000	.8485	.7639	1.3091	.8661	1.0000	1.0000	1.0000
23	3.5250	3.9452	1.0000	.8809	.8224	1.2159	.8996	1.0000	1.0000	1.0000
24	4.0556	4.1770	1.0000	.9057	.8732	1.1452	.9244	1.0000	1.0000	1.0000
25	4.5329	4.3463	1.0000	.9229	.9120	1.0965	.9412	1.0000	1.0000	1.0000
26	5.0305	4.4790	1.0000	.9371	.9422	1.0613	.9542	1.0000	1.0000	1.0000
27	5.5535	4.5979	1.0000	.9503	.9691	1.0318	.9658	1.0000	1.0000	1.0000
28	6.0409	4.6784	1.0000	.9628	.9839	1.0163	.9753	1.0000	1.0000	1.0000
29	6.5816	4.7426	1.0000	.9742	.9942	1.0058	.9836	1.0000	1.0000	1.0000
30	7.0869	4.7626	1.0000	.9826	.9926	1.0075	.9886	1.0000	1.0000	1.0000
31	7.6098	4.8042	1.0000	.9902	.9991	1.0009	.9939	1.0000	1.0000	1.0000
32	8.0744	4.8462	1.0000	.9963	1.0073	.9927	.9985	1.0000	1.0000	1.0000
33	8.6025	4.8357	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
34	9.0696	4.8366	1.0000	1.0027	.9976	1.0024	1.0014	1.0000	1.0000	1.0000
35	9.5265	4.8359	1.0000	1.0045	.9956	1.0044	1.0022	1.0000	1.0000	1.0000
36	10.1790	4.8333	1.0000	1.0059	.9934	1.0067	1.0028	1.0000	1.0000	1.0000



TABLE 5 NOL BOUNDARY LAYER CHANNEL PROFILE DATA  
RUN NO 2161

STA = 2.210E+00 M ME = 4.890E+00 MPW = 4.885E+00 DELT = 5.579E+00 CM  
 PO = 1.012E+06 N/M2 DE = 1.106E-01 KG/M3 DPW = 1.083E-01 KG/M3 DSTRP = 1.785E+00 CM  
 TO = 4.191E+02 DEG.K TE = 7.247E+01 DEG.K TPW = 7.187E+01 DEG.K THP = 2.911E-01 CM  
 PSW = 2.191E+03 N/M2 UE = 8.345E+02 M/S UPW = 8.352E+02 M/S THEP = 5.240E-01 CM  
 TW = 9.974E+01 DEG.K RE = 1.875E+07 1/M RPW = 1.856E+07 1/M THHP = 2.430E-01 CM

N	Y(CM)	M	PS/PSW	TT/TTE	D/DE	T/TE	U/UE	DP/DPE	TP/TPE	UP/UPPE
1	0.0000	0.0000	1.0000	.2380	.7057	1.3764	0.0000	.9795	.9917	1.0009
2	.0063	.7509	1.0000	.3837	.4872	1.9939	.2168	.9795	.9917	1.0009
3	.0140	.9687	1.0000	.4348	.4588	2.1173	.2882	.9795	.9917	1.0009
4	.0394	1.5861	1.0000	.5848	.4317	2.2499	.4865	.9795	.9917	1.0009
5	.0622	1.7506	1.0000	.6239	.4342	2.2371	.5354	.9795	.9917	1.0009
6	.0978	1.8238	1.0000	.6403	.4369	2.2235	.5561	.9795	.9917	1.0009
7	.1355	1.8918	1.0000	.6557	.4395	2.2100	.5751	.9795	.9917	1.0009
8	.1664	1.9311	1.0000	.6644	.4414	2.2009	.5858	.9795	.9917	1.0009
9	.1918	1.9674	1.0000	.6729	.4429	2.1933	.5958	.9795	.9917	1.0009
10	.2400	2.0249	1.0000	.6852	.4462	2.1770	.6109	.9795	.9917	1.0009
11	.4735	2.2530	1.0000	.7263	.4661	2.0842	.6651	.9795	.9917	1.0009
12	.7402	2.4676	1.0000	.7651	.4869	1.9950	.7127	.9795	.9917	1.0009
13	.9964	2.6874	1.0000	.8004	.5130	1.8936	.7562	.9795	.9917	1.0009
14	1.4991	3.0761	1.0000	.8570	.5669	1.7135	.8234	.9795	.9917	1.0009
15	1.9738	3.4512	1.0000	.9014	.6302	1.5413	.8761	.9795	.9917	1.0009
16	2.4968	3.8456	1.0000	.9376	.7090	1.3701	.9204	.9795	.9917	1.0009
17	3.0173	4.1958	1.0035	.9577	.7957	1.2250	.9496	.9819	.9927	1.0008
18	3.5098	4.4424	1.0070	.9686	.8639	1.1323	.9666	.9844	.9937	1.0007
19	4.0201	4.5945	1.0108	.9760	.9083	1.0809	.9768	.9870	.9948	1.0006
20	4.5202	4.7096	1.0144	.9831	.9421	1.0459	.9849	.9895	.9958	1.0004
21	5.0686	4.8014	1.0184	.9890	.9704	1.0194	.9913	.9923	.9969	1.0003
* 22	5.5789	4.8450	1.0221	.9955	.9821	1.0109	.9961	.9949	.9979	1.0002
23	6.0409	4.8675	1.0254	.9968	.9916	1.0045	.9976	.9972	.9989	1.0001
** 24	6.5943	4.8903	1.0295	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
25	7.0894	4.8592	1.0331	1.0012	.9918	1.0118	.9995	1.0025	1.0010	.9999
26	7.5844	4.8538	1.0406	1.0018	.9965	1.0143	.9996	1.0077	1.0031	.9997
27	8.0922	4.8468	1.0494	1.0025	1.0019	1.0174	.9997	1.0138	1.0055	.9994
28	8.5949	4.8438	1.0519	1.0041	1.0017	1.0200	1.0004	1.0155	1.0062	.9993
29	9.1102	4.8414	1.0550	1.0046	1.0033	1.0215	1.0006	1.0177	1.0070	.9993
30	9.6129	4.8415	1.0542	1.0047	1.0025	1.0215	1.0006	1.0171	1.0068	.9993
31	10.2197	4.8510	1.0404	1.0060	.9913	1.0195	1.0016	1.0076	1.0030	.9997

TABLE 5 NOL BOUNDARY LAYER CHANNEL PROFILE DATA  
RUN NO 2162

STA = 2.210E+00 M ME = 4.857E+00 MPW = 4.829E+00 DELP = 6.574E+00 CM  
 PO = 5.141E+05 N/M2 DE = 5.450E-02 KG/M3 DPW = 5.583E-02 KG/M3 DSTRP = 2.007E+00 CM  
 TO = 4.221E+02 DEG.K TE = 7.381E+01 DEG.K TPW = 7.452E+01 DEG.K THP = 3.683E-01 CM  
 PSW = 1.189E+03 N/M2 UE = 8.365E+02 M/S UPW = 8.357E+02 M/S THEP = 6.577E-01 CM  
 TW = 8.796E+01 DEG.K RE = 9.079E+06 1/M RPW = 9.194E+06 1/M THMP = 3.362E-01 CM

N	Y (CM)	M	PS/PSW	T/TTE	D/DE	T/TE	U/UE	DP/DPE	TP/TPE	UP/UPE
1	0.0000	0.0000	1.0000	.2084	.8680	1.1917	0.0000	1.0245	1.0097	.9990
2	.0063	.5543	1.0000	.3154	.6087	1.6995	.1488	1.0245	1.0097	.9990
3	.0191	1.0552	1.0000	.4353	.5080	2.0362	.3100	1.0245	1.0097	.9990
4	.0572	1.6277	1.0000	.5761	.4804	2.1534	.4917	1.0245	1.0097	.9990
5	.0775	1.7001	1.0000	.5931	.4812	2.1495	.5131	1.0245	1.0097	.9990
6	.1054	1.7419	1.0000	.6027	.4822	2.1450	.5252	1.0245	1.0097	.9990
7	.1334	1.7702	1.0000	.6089	.4832	2.1407	.5332	1.0245	1.0097	.9990
8	.1562	1.8029	1.0000	.6155	.4849	2.1333	.5421	1.0245	1.0097	.9990
9	.1740	1.8179	1.0000	.6205	.4841	2.1366	.5470	1.0245	1.0097	.9990
10	.2172	1.8624	1.0000	.6331	.4839	2.1376	.5606	1.0245	1.0097	.9990
11	.4557	2.0839	1.0000	.6759	.5000	2.0686	.6170	1.0245	1.0097	.9990
12	.7224	2.2858	1.0000	.7149	.5174	1.9993	.6654	1.0245	1.0097	.9990
13	.9761	2.4595	1.0000	.7485	.5340	1.9371	.7047	1.0245	1.0097	.9990
14	1.2301	2.6301	1.0000	.7794	.5531	1.8701	.7404	1.0245	1.0097	.9990
15	1.4991	2.8113	1.0000	.8086	.5773	1.7918	.7747	1.0245	1.0097	.9990
16	1.7429	2.9797	1.0000	.8344	.6017	1.7193	.8043	1.0245	1.0097	.9990
17	1.9967	3.1594	1.0000	.8592	.6308	1.6399	.8329	1.0245	1.0097	.9990
18	2.2431	3.3355	1.0000	.8797	.6637	1.5600	.8577	1.0245	1.0097	.9990
19	2.5121	3.5199	1.0000	.8990	.6997	1.4783	.8811	1.0245	1.0097	.9990
20	3.0223	3.8871	.9970	.9281	.7814	1.3197	.9193	1.0222	1.0088	.9991
21	3.5123	4.1940	.9939	.9461	.8585	1.1975	.9449	1.0200	1.0079	.9992
22	4.0251	4.3859	.9907	.9578	.9068	1.1300	.9598	1.0176	1.0070	.9993
23	4.5380	4.5488	.9874	.9662	.9498	1.0754	.9711	1.0152	1.0061	.9994
24	5.0279	4.6575	.9844	.9747	.9752	1.0441	.9798	1.0130	1.0052	.9995
25	5.5458	4.7453	.9811	.9834	.9931	1.0219	.9875	1.0106	1.0042	.9996
26	6.0663	4.7972	.9778	.9879	1.0031	1.0084	.9917	1.0082	1.0033	.9997
* 27	6.5740	4.8355	.9746	.9939	1.0068	1.0013	.9962	1.0058	1.0023	.9998
28	7.0869	4.8538	.9714	.9974	1.0062	.9986	.9986	1.0035	1.0014	.9999
** 29	7.5565	4.8574	.9667	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
30	8.1023	4.8548	.9721	1.0010	1.0037	1.0019	1.0004	1.0040	1.0016	.9998
31	8.5923	4.8543	.9711	1.0023	1.0011	1.0034	1.0010	1.0032	1.0013	.9999
32	9.1128	4.8561	.9688	1.0033	.9984	1.0038	1.0016	1.0015	1.0006	.9999
33	9.6383	4.8595	.9645	1.0037	.9947	1.0030	1.0019	.9983	.9993	1.0001
34	10.2781	4.8751	.9443	1.0048	.9779	.9988	1.0030	.9833	.9933	1.0007

TABLE 5 NOL BOUNDARY LAYER CHANNEL PROFILE DATA  
RUN NO 2163

STA = 2.210E+00 M ME = 4.822E+00 MPW = 4.798E+00 DELP = 8.067E+00 CM  
 PO = 1.021E+05 N/M2 DE = 1.130E+02 KG/M3 DPM = 1.151E+02 KC/M3 DSTRP = 2.273E+00 CM  
 TO = 4.264E+02 DEG.K TE = 7.546E+01 DEG.K TPN = 7.602E+01 DEG.K THP = 5.548E-01 CM  
 PSW = 2.451E+02 N/M2 UE = 8.397E+02 M/S UPW = 8.390E+02 M/S THEP = 9.838E-01 CM  
 TW = 8.434E+01 DEG.K RE = 1.844E+06 1/M RPM = 1.862E+06 1/M THMP = 6.107E-01 CM

N	Y(CM)	M	PS/PSW	IT/TTE	D/DE	T/TE	U/UE	DP/DPE	TP/TPE	UP/UPE
1	0.0000	0.0000	1.0000	.1978	.9182	1.1177	0.0000	1.0187	1.0074	.9992
2	.0063	.4501	1.0000	.2668	.7083	1.4488	.1124	1.0187	1.0074	.9992
3	.0343	1.0083	1.0000	.3806	.5742	1.7873	.2795	1.0187	1.0074	.9992
4	.0572	1.3003	1.0000	.4472	.5434	1.8885	.3706	1.0187	1.0074	.9992
5	.0825	1.4940	1.0000	.4929	.5330	1.9255	.4299	1.0187	1.0074	.9992
6	.1105	1.6445	1.0000	.5243	.5338	1.9226	.4729	1.0187	1.0074	.9992
7	.1384	1.7290	1.0000	.5432	.5343	1.9207	.4969	1.0187	1.0074	.9992
8	.1562	1.7645	1.0000	.5523	.5336	1.9232	.5075	1.0187	1.0074	.9992
9	.1816	1.8130	1.0000	.5645	.5333	1.9245	.5216	1.0187	1.0074	.9992
10	.4404	2.0439	1.0000	.6083	.5480	1.8727	.5800	1.0187	1.0074	.9992
11	.7046	2.2157	1.0000	.6386	.5637	1.8207	.6200	1.0187	1.0074	.9992
12	.9304	2.3526	1.0000	.6605	.5794	1.7714	.6493	1.0187	1.0074	.9992
13	1.2149	2.5175	1.0000	.6889	.5979	1.7165	.6840	1.0187	1.0074	.9992
14	1.4635	2.6511	1.0000	.7109	.6147	1.6697	.7104	1.0187	1.0074	.9992
15	1.7125	2.7858	1.0000	.7314	.6337	1.6193	.7352	1.0187	1.0074	.9992
16	1.9865	2.9404	1.0000	.7558	.6558	1.5648	.7628	1.0187	1.0074	.9992
17	2.2151	3.0715	1.0000	.7772	.6746	1.5212	.7856	1.0187	1.0074	.9992
18	2.4663	3.2055	1.0000	.7991	.6944	1.4779	.8082	1.0187	1.0074	.9992
19	2.9969	3.5113	.9979	.8384	.7493	1.3668	.8513	1.0171	1.0068	.9993
20	3.5047	3.8052	.9955	.8716	.8082	1.2641	.8872	1.0154	1.0061	.9993
21	4.0124	4.0481	.9931	.8959	.8612	1.1834	.9133	1.0137	1.0055	.9994
22	4.5151	4.2601	.9908	.9170	.9086	1.1191	.9346	1.0120	1.0048	.9995
23	5.0229	4.4257	.9884	.9326	.9466	1.0716	.9501	1.0102	1.0041	.9996
24	5.5255	4.5461	.9861	.9466	.9713	1.0419	.9623	1.0085	1.0034	.9996
25	6.0002	4.6171	.9839	.9568	.9830	1.0271	.9704	1.0069	1.0028	.9997
26	6.5410	4.6964	.9813	.9687	.9956	1.0116	.9796	1.0051	1.0020	.9998
27	7.0513	4.7705	.9790	.9788	1.0085	.9962	.9874	1.0033	1.0013	.9999
28	7.5311	4.7900	.9767	.9852	1.0063	.9961	.9914	1.0017	1.0007	.9999
* 29	8.0668	4.8069	.9742	.9928	1.0018	.9980	.9959	.9999	.9999	1.0000
30	8.5695	4.8228	.9719	.9968	1.0009	.9965	.9984	.9981	.9993	1.0001
** 31	9.0848	4.8220	.9744	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
32	9.5951	4.8210	.9745	1.0022	.9975	1.0026	1.0011	1.0001	1.0000	1.0000
33	10.1155	4.8253	.9674	1.0039	.9901	1.0027	1.0021	.9949	.9979	1.0002

TABLE 5 NOL BOUNDARY LAYER CHANNEL PROFILE DATA  
RUN NO 2103

STA = 1.448E+00 M ME = 4.929E+00 MPW = 4.989E+00 DELP = 6.107E+00 CM  
 PO = 5.156E+05 N/M2 DE = 5.358E-02 KG/M3 DPW = 4.969E-02 KG/M3 DSTRP = 1.626E+00 CM  
 TO = 4.201E+02 DEG.K TE = 7.171E+01 DEG.K TPW = 6.958E+01 DEG.K TAP = 3.239E-01 CM  
 PSW = 9.871E+02 N/M2 UE = 8.366E+02 M/S UPW = 8.392E+02 M/S THP = 5.860E-01 CM  
 TW = 8.605E+01 DEG.K RE = 9.216E+06 1/M RPW = 8.865E+06 1/M THHP = 3.279E-01 CM

N	Y(ICM)	M	PS/PSW	IT/YTE	D/DE	T/TE	U/UE	DP/DPE	TP/TPE	UP/UPE
1	0.0000	0.0000	1.0000	.2048	.7500	1.2000	0.0000	.9275	.9704	1.0031
2	.0063	.6948	1.0000	.3184	.5291	1.7013	.1839	.9275	.9704	1.0031
3	.0114	1.0164	1.0000	.3848	.4818	1.8663	.2819	.9275	.9704	1.0031
4	.0165	1.1394	1.0000	.4117	.4701	1.9148	.3199	.9275	.9704	1.0031
5	.0191	1.2788	1.0000	.4432	.4600	1.9566	.3629	.9275	.9704	1.0031
6	.0267	1.4873	1.0000	.4926	.4499	2.0005	.4268	.9275	.9704	1.0031
7	.0292	1.5593	1.0000	.5011	.4557	1.9752	.4446	.9275	.9704	1.0031
8	.0368	1.6745	1.0000	.5155	.4652	1.9350	.4726	.9275	.9704	1.0031
9	.0394	1.7019	1.0000	.5197	.4668	1.9280	.4795	.9275	.9704	1.0031
10	.0470	1.7810	1.0000	.5301	.4737	1.9001	.4981	.9275	.9704	1.0031
11	.0521	1.8012	1.0000	.5333	.4750	1.8947	.5031	.9275	.9704	1.0031
12	.0546	1.8255	1.0000	.5363	.4774	1.8853	.5086	.9275	.9704	1.0031
13	.0648	1.8760	1.0000	.5468	.4788	1.8800	.5219	.9275	.9704	1.0031
14	.0851	1.9454	1.0000	.5634	.4791	1.8785	.5410	.9275	.9704	1.0031
15	.1130	1.9850	1.0000	.5780	.4753	1.8937	.5542	.9275	.9704	1.0031
16	.1410	2.0167	1.0000	.5904	.4719	1.9075	.5651	.9275	.9704	1.0031
17	.1638	2.0491	1.0000	.5983	.4724	1.9051	.5738	.9275	.9704	1.0031
18	.1918	2.0913	1.0000	.6082	.4736	1.9005	.5850	.9275	.9704	1.0031
19	.2197	2.1358	1.0000	.6172	.4760	1.8907	.5959	.9275	.9704	1.0031
20	.2426	2.1732	1.0000	.6265	.4769	1.8875	.6058	.9275	.9704	1.0031
21	.2705	2.2088	1.0000	.6370	.4766	1.8886	.6159	.9275	.9704	1.0031
22	.5169	2.5154	1.0000	.6952	.5006	1.7979	.6843	.9275	.9704	1.0031
23	.7937	2.8017	1.0000	.7454	.5297	1.6992	.7410	.9275	.9704	1.0031
24	1.0503	3.0384	1.0003	.7824	.5591	1.6103	.7823	.9278	.9705	1.0031
25	1.2891	3.2329	1.0027	.8137	.5851	1.5425	.8147	.9293	.9711	1.0030
26	1.5431	3.4344	1.0052	.8428	.6155	1.4698	.8448	.9310	.9718	1.0029
27	1.7920	3.6346	1.0076	.8688	.6490	1.3974	.8718	.9326	.9725	1.0029
28	2.0561	3.8429	1.0102	.8928	.6873	1.3230	.8968	.9343	.9732	1.0028
29	2.2771	3.9976	1.0124	.9083	.7186	1.2681	.9134	.9358	.9738	1.0027
30	2.5743	4.1887	1.0156	.9288	.7575	1.2067	.9336	.9378	.9747	1.0026
31	3.0721	4.4154	1.0237	.9455	.8149	1.1307	.9526	.9432	.9769	1.0024
32	3.5674	4.5485	1.0319	.9596	.8488	1.0942	.9654	.9486	.9791	1.0022
33	4.0881	4.6587	1.0406	.9699	.8804	1.0639	.9750	.9543	.9815	1.0019
34	4.6037	4.7482	1.0543	.9781	.9124	1.0401	.9825	.9633	.9851	1.0015
35	5.1219	4.8346	1.0682	.9863	.9442	1.0183	.9898	.9723	.9888	1.0012
36	5.6147	4.8479	1.0821	.9914	.9559	1.0188	.9928	.9813	.9925	1.0008
* 37	6.1074	4.8806	1.0959	.9967	.9737	1.0130	.9967	.9903	.9961	1.0004
** 38	6.6434	4.9286	1.1110	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
39	7.1158	4.8920	1.1243	1.0017	.9979	1.0141	.9996	1.0085	1.0034	.9996
40	7.6543	4.8826	1.1366	1.0031	1.0041	1.0188	.9999	1.0164	1.0065	.9993
41	8.1267	4.8524	1.1828	1.0054	1.0318	1.0317	1.0000	1.0457	1.0180	.9981
42	8.6474	4.8348	1.2036	1.0040	1.0453	1.0364	.9986	1.0588	1.0231	.9976
43	9.1681	4.8264	1.2149	1.0051	1.0509	1.0405	.9989	1.0659	1.0259	.9973
44	9.6761	4.8104	1.2401	1.0033	1.0687	1.0444	.9974	1.0817	1.0319	.9967
45	10.1740	4.7993	1.2553	1.0036	1.0774	1.0487	.9972	1.0911	1.0355	.9963

TABLE 5 NOL BOUNDARY LAYER CHANNEL PROFILE DATA  
RUN NO 2104

STA = 1.448E+00 M ME = 4.792E+00 MPW = 4.869E+00 DELP = 7.136E+00 CM  
 PO = 1.026E+05 N/M2 DE = 1.143E-02 KG/M3 UPW = 1.079E-02 KG/M3 DSTRP = 1.630E+00 CM  
 TO = 4.262E+02 DEG.K TE = 7.623E+01 DEG.K TPW = 7.450E+01 DEG.K THP = 4.704E+01 CM  
 PSW = 2.262E+02 N/M2 UE = 8.386E+02 M/S UPW = 8.407E+02 M/S THEP = 8.417E+01 CM  
 TW = 8.214E+01 DEG.K RE = 1.843E+06 1/M RPW = 1.789E+06 1/M THHP = 5.639E+01 CM

N	Y(CM)	M	PS/PSW	TY/TTE	D/DE	T/TE	U/UE	DP/DPE	TP/TPE	UP/UPE
1	0.0000	0.0000	1.0000	.1927	.8564	1.0777	0.0000	.9443	.9773	1.0025
2	.0063	.5132	1.0000	.2692	.6455	1.4298	.1281	.9443	.9773	1.0025
3	.0191	.8380	1.0000	.3311	.5685	1.6234	.2228	.9443	.9773	1.0025
4	.0419	1.2725	1.0000	.4123	.5300	1.7415	.3505	.9443	.9773	1.0025
5	.0648	1.5597	1.0000	.4665	.5259	1.7548	.4312	.9443	.9773	1.0025
6	.0953	1.7996	1.0000	.5058	.5376	1.7167	.4921	.9443	.9773	1.0025
7	.1156	1.8815	1.0000	.5231	.5389	1.7126	.5139	.9443	.9773	1.0025
8	.1460	1.9655	1.0000	.5383	.5435	1.6982	.5346	.9443	.9773	1.0025
9	.1689	2.0230	1.0000	.5480	.5477	1.6851	.5481	.9443	.9773	1.0025
10	.1994	2.0664	1.0000	.5554	.5509	1.6752	.5582	.9443	.9773	1.0025
11	.2197	2.1007	1.0000	.5606	.5542	1.6652	.5657	.9443	.9773	1.0025
12	.2426	2.1256	1.0000	.5632	.5578	1.6544	.5706	.9443	.9773	1.0025
13	.2781	2.1674	1.0000	.5710	.5606	1.6462	.5804	.9443	.9773	1.0025
14	.5474	2.4373	1.0000	.6207	.5818	1.5864	.6407	.9443	.9773	1.0025
15	.7937	2.6562	1.0000	.6591	.6038	1.5285	.6854	.9443	.9773	1.0025
16	1.0325	2.8455	1.0000	.6915	.6252	1.4762	.7215	.9443	.9773	1.0025
17	1.2891	3.0328	1.0000	.7224	.6487	1.4226	.7549	.9443	.9773	1.0025
18	1.5558	3.2194	1.0000	.7518	.6746	1.3681	.7859	.9443	.9773	1.0025
19	1.7970	3.3997	1.0000	.7828	.6982	1.3218	.8157	.9443	.9773	1.0025
20	2.0434	3.5648	1.0000	.8089	.7226	1.2771	.8408	.9443	.9773	1.0025
21	2.3050	3.7313	1.0000	.8334	.7495	1.2314	.8641	.9443	.9773	1.0025
22	2.5743	3.8997	1.0002	.8581	.7775	1.1872	.8868	.9445	.9774	1.0024
23	3.0696	4.1441	1.0035	.8901	.8251	1.1224	.9163	.9466	.9783	1.0023
24	3.5674	4.3141	1.0067	.9129	.8595	1.0810	.9361	.9488	.9792	1.0023
25	4.0983	4.4460	1.0104	.9316	.8931	1.0441	.9524	.9513	.9802	1.0021
26	4.5682	4.5630	1.0166	.9443	.9176	1.0225	.9629	.9555	.9819	1.0020
27	5.1067	4.6918	1.0237	.9586	.9522	.9922	.9753	.9602	.9839	1.0017
28	5.5969	4.7576	1.0302	.9702	.9686	.9816	.9837	.9646	.9857	1.0016
29	6.1303	4.7760	1.0432	.9820	.9751	.9873	.9904	.9732	.9892	1.0012
30	6.6180	4.7923	1.0550	.9896	.9841	.9894	.9948	.9811	.9924	1.0008
* 31	7.1361	4.8139	1.0678	.9961	.9968	.9886	.9989	.9896	.9958	1.0005
** 32	7.6213	4.7916	1.0835	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
33	8.1470	4.7880	1.1008	1.0050	1.0096	1.0063	1.0024	1.0114	1.0045	.9995
34	8.6449	4.7953	1.1220	1.0062	1.0304	1.0049	1.0032	1.0253	1.0100	.9989
35	9.1707	4.7853	1.1445	1.0050	1.0487	1.0072	1.0023	1.0399	1.0158	.9983
36	9.6914	4.7303	1.1667	1.0036	1.0505	1.0250	.9995	1.0542	1.0213	.9977
37	10.1994	4.7094	1.1883	.9998	1.0663	1.0285	.9968	1.0682	1.0267	.9971

TABLE 5 NOL BOUNDARY LAYER CHANNEL PROFILE DATA  
RUN NO 2101

STA = 1.702E+00 M	ME = 4.919E+00	MPW = 4.934E+00	DELP = 6.615E+00 CM
PO = 5.171E+05 N/M2	DE = 5.152E-02 KG/M3	DPW = 5.076E-02 KG/M3	DSTRP = 1.705E+00 CM
TO = 4.266E+02 DEG.K	TE = 7.307E+01 DEG.K	TPW = 7.264E+01 DEG.K	THP = 3.778E-01 CM
PSW = 1.055E+03 N/M2	UE = 8.428E+02 M/S	UPW = 8.433E+02 M/S	THEP = 6.775E-01 CM
TW = 8.900E+01 DEG.K	RE = 8.744E+06 1/M	RPW = 8.676E+06 1/M	THHP = 4.062E-01 CM

N	Y (CM)	M	PS/PSW	T/TTE	D/DE	T/TE	U/UE	DP/DPE	TP/TPE	UP/UPE
1	0.0000	0.0000	1.0000	.2086	.8040	1.2181	0.0000	.9852	.9941	1.0006
2	.0063	.7145	1.0000	.3105	.5954	1.6449	.1863	.9852	.9941	1.0006
3	.0114	.8828	1.0000	.3411	.5685	1.7227	.2356	.9852	.9941	1.0006
4	.0140	1.0063	1.0000	.3632	.5554	1.7632	.2717	.9852	.9941	1.0006
5	.0191	1.1219	1.0000	.3940	.5330	1.8376	.3092	.9852	.9941	1.0006
6	.0241	1.2938	1.0000	.4281	.5230	1.8727	.3500	.9852	.9941	1.0006
7	.0292	1.3720	1.0000	.4482	.5152	1.9011	.3846	.9852	.9941	1.0006
8	.0343	1.5021	1.0000	.4731	.5146	1.9032	.4213	.9852	.9941	1.0006
9	.0419	1.5848	1.0000	.4912	.5130	1.9090	.4452	.9852	.9941	1.0006
10	.0444	1.6194	1.0000	.4968	.5147	1.9026	.4541	.9852	.9941	1.0006
11	.0521	1.6627	1.0000	.5060	.5148	1.9025	.4663	.9852	.9941	1.0006
12	.0546	1.6770	1.0000	.5095	.5144	1.9039	.4705	.9852	.9941	1.0006
13	.0825	1.7847	1.0000	.5356	.5126	1.9104	.5015	.9852	.9941	1.0006
14	.1080	1.8268	1.0000	.5521	.5066	1.9331	.5164	.9852	.9941	1.0006
15	.1308	1.8597	1.0000	.5633	.5037	1.9441	.5272	.9852	.9941	1.0006
16	.1588	1.8925	1.0000	.5735	.5020	1.9508	.5374	.9852	.9941	1.0006
17	.1816	1.9268	1.0000	.5823	.5019	1.9512	.5472	.9852	.9941	1.0006
18	.2096	1.9668	1.0000	.5909	.5035	1.9452	.5577	.9852	.9941	1.0006
19	.2349	1.9962	1.0000	.5981	.5040	1.9432	.5657	.9852	.9941	1.0006
20	.2680	2.0340	1.0000	.6065	.5054	1.9378	.5757	.9852	.9941	1.0006
21	.5245	2.2990	1.0000	.6611	.5220	1.8763	.6402	.9852	.9941	1.0006
22	.7887	2.5357	1.0000	.7059	.5432	1.8028	.6922	.9852	.9941	1.0006
23	1.0401	2.7415	1.0000	.7415	.5662	1.7296	.7330	.9852	.9941	1.0006
24	1.2891	2.9435	1.0000	.7738	.5924	1.6533	.7695	.9852	.9941	1.0006
25	1.5354	3.1448	1.0000	.8039	.6214	1.5761	.8027	.9852	.9941	1.0006
26	1.7970	3.3547	1.0000	.8329	.6546	1.4960	.8342	.9852	.9941	1.0006
27	2.0460	3.5518	1.0000	.8575	.6892	1.4211	.8608	.9852	.9941	1.0006
28	2.3076	3.7549	1.0000	.8803	.7278	1.3456	.8855	.9852	.9941	1.0006
29	2.5819	3.9583	1.0002	.9024	.7685	1.2746	.9086	.9853	.9941	1.0006
30	3.0924	4.2850	1.0024	.9266	.8478	1.1579	.9374	.9869	.9947	1.0005
31	3.5776	4.4893	1.0045	.9400	.9017	1.0910	.9533	.9884	.9953	1.0005
32	4.0831	4.6353	1.0067	.9535	.9381	1.0509	.9661	.9899	.9959	1.0004
33	4.5657	4.7313	1.0088	.9623	.9631	1.0258	.9742	.9914	.9965	1.0004
34	5.0635	4.8007	1.0109	.9712	.9794	1.0108	.9813	.9929	.9971	1.0003
35	5.5994	4.8685	1.0133	.9792	.9964	.9960	.9878	.9945	.9978	1.0002
36	6.1024	4.8725	1.0154	.9839	.9951	.9993	.9903	.9960	.9984	1.0002
37	6.6154	4.9213	1.0177	.9909	1.0067	.9900	.9955	.9976	.9990	1.0001
38	7.1387	4.9203	1.0184	.9920	1.0060	.9915	.9961	.9981	.9993	1.0001
39	7.6035	4.9206	1.0177	.9962	1.0012	.9955	.9982	.9976	.9991	1.0001
40	8.1445	4.9186	1.0211	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
41	8.6500	4.9149	1.0259	.9997	1.0037	1.0010	.9997	1.0033	1.0013	.9999
42	9.1681	4.9015	1.0458	1.0022	1.0160	1.0060	1.0005	1.0172	1.0068	.9993
43	9.3891	4.8940	1.0553	1.0038	1.0211	1.0122	1.0010	1.0238	1.0095	.9990
44	9.6787	4.8932	1.0459	1.0037	1.0117	1.0124	1.0010	1.0173	1.0069	.9993
45	9.8361	4.8999	1.0389	1.0041	1.0068	1.0105	1.0014	1.0124	1.0049	.9995
46	10.2883	4.8971	1.0504	1.0039	1.0174	1.0112	1.0012	1.0204	1.0081	.9992

TABLE 5 NOL BOUNDARY LAYER CHANNEL PROFILE DATA  
RUN NO 2102

STA = 1.702E+00 M	ME = 4.821E+00	MPW = 4.863E+00	DELP = 8.122E+00 CM
PO = 1.014E+05 N/M2	DE = 1.102E-02 KG/M3	DPW = 1.060E-02 KG/M3	DSTRP = 1.791E+00 CM
TO = 4.297E+02 DEG.K	TE = 7.608E+01 DEG.K	TPW = 7.491E+01 DEG.K	THP = 5.522E-01 CM
PSW = 2.251E+02 N/M2	UE = 3.429E+02 M/S	UPW = 8.443E+02 M/S	THP = 9.844E-01 CM
TW = 8.678E+01 DEG.K	RE = 1.789E+06 1/M	RPW = 1.754E+06 1/M	THMP = 6.823E-01 CM

N	Y(CM)	M	PS/PSW	IT/TTE	D/DE	T/TE	U/UE	DP/DPE	TP/TPE	UP/UPE
1	0.0000	0.0000	1.0000	.2019	.8305	1.1405	0.0000	.9620	.9846	1.0017
2	.0063	.5160	1.0000	.2552	.6921	1.3685	.1252	.9620	.9846	1.0017
3	.0140	.7186	1.0000	.2826	.6548	1.4465	.1793	.9620	.9846	1.0017
4	.0216	.8971	1.0000	.3080	.6321	1.4984	.2278	.9620	.9846	1.0017
5	.0317	1.0083	1.0000	.3278	.6156	1.5386	.2594	.9620	.9846	1.0017
6	.0343	1.1184	1.0000	.3404	.6160	1.5377	.2877	.9620	.9846	1.0017
7	.0419	1.2142	1.0000	.3651	.5948	1.5925	.3179	.9620	.9846	1.0017
8	.0444	1.2516	1.0000	.3726	.5912	1.6022	.3286	.9620	.9846	1.0017
9	.0495	1.2955	1.0000	.3833	.5843	1.6209	.3421	.9620	.9846	1.0017
10	.0572	1.3758	1.0000	.3980	.5809	1.6306	.3645	.9620	.9846	1.0017
11	.0622	1.4621	1.0000	.4164	.5750	1.6472	.3893	.9620	.9846	1.0017
12	.0876	1.6655	1.0000	.4652	.5605	1.6899	.4491	.9620	.9846	1.0017
13	.1130	1.7901	1.0000	.4907	.5608	1.6891	.4826	.9620	.9846	1.0017
14	.1359	1.8737	1.0000	.5064	.5637	1.6801	.5038	.9620	.9846	1.0017
15	.1638	1.9297	1.0000	.5195	.5632	1.6816	.5191	.9620	.9846	1.0017
16	.1892	1.9736	1.0000	.5279	.5652	1.6758	.5300	.9620	.9846	1.0017
17	.2096	2.0026	1.0000	.5358	.5641	1.6792	.5383	.9620	.9846	1.0017
18	.2680	2.0603	1.0000	.5504	.5634	1.6812	.5541	.9620	.9846	1.0017
19	.5347	2.2950	1.0000	.5963	.5775	1.6400	.6097	.9620	.9846	1.0017
20	.7810	2.4897	1.0000	.6283	.5978	1.5844	.6501	.9620	.9846	1.0017
21	1.0452	2.6724	1.0000	.6620	.6152	1.5396	.6879	.9620	.9846	1.0017
22	1.2967	2.8540	1.0000	.6913	.6378	1.4851	.7215	.9620	.9846	1.0017
23	1.5456	3.0207	1.0000	.7173	.6604	1.4342	.7504	.9620	.9846	1.0017
24	1.8072	3.2061	1.0000	.7445	.6884	1.3760	.7801	.9620	.9846	1.0017
25	2.0536	3.3695	1.0000	.7669	.7152	1.3243	.8044	.9620	.9846	1.0017
26	2.3152	3.5318	1.0000	.7944	.7378	1.2838	.8301	.9620	.9846	1.0017
27	2.5514	3.6777	1.0001	.8206	.7573	1.2508	.8532	.9620	.9846	1.0017
28	3.0823	3.9904	1.0027	.8595	.8187	1.1599	.8915	.9638	.9854	1.0016
29	3.5547	4.2178	1.0050	.8868	.8663	1.0988	.9171	.9654	.9860	1.0015
30	4.0881	4.4078	1.0076	.9076	.9096	1.0492	.9366	.9672	.9867	1.0014
31	4.5834	4.5272	1.0101	.9227	.9362	1.0219	.9494	.9689	.9874	1.0014
32	5.1041	4.6324	1.0126	.9373	.9588	1.0003	.9611	.9706	.9881	1.0013
33	5.6248	4.7355	1.0153	.9497	.9834	.9778	.9714	.9724	.9889	1.0012
34	6.1100	4.7725	1.0191	.9603	.9887	.9762	.9782	.9750	.9899	1.0011
35	6.6358	4.7496	1.0232	.9728	.9891	.9798	.9855	.9779	.9911	1.0010
36	7.1082	4.8253	1.0269	.9797	.9944	.9781	.9900	.9804	.9921	1.0009
37	7.6365	4.8306	1.0310	.9865	.9933	.9832	.9936	.9832	.9932	1.0007
38	8.1216	4.8367	1.0348	.9925	.9930	.9871	.9968	.9858	.9943	1.0006
39	8.6169	4.8291	1.0468	.9977	.9967	.9948	.9991	.9939	.9976	1.0003
40	9.1453	4.8206	1.0558	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
41	9.6279	4.8188	1.0556	1.0026	.9967	1.0032	1.0012	.9999	1.0000	1.0000
42	10.1816	4.8165	1.0605	1.0035	.9996	1.0049	1.0016	1.0032	1.0013	.9999

TABLE 6 NOL BOUNDARY LAYER CHANNEL SKIN FRICTION DATA

PO N/M2	TO DEG.K	TW DEG.K	MPW	THP CM	RTHPW	TAUW N/M2	CF
RUN NO. 012222, ZPG-AW, 1.524 M STATION, KISTLER BALANCE							
1.034E+06	329.8	295.6	4.894	.1771	4.738E+04	2.305E+01	6.209E-04
9.308E+05	335.8	295.6	4.891	.1800	4.213E+04	2.127E+01	6.349E-04
8.274E+05	334.3	295.0	4.883	.1823	3.833E+04	1.941E+01	6.483E-04
7.239E+05	333.8	295.0	4.883	.1853	3.418E+04	1.728E+01	6.591E-04
6.205E+05	336.9	295.0	4.877	.1891	2.952E+04	1.535E+01	6.801E-04
5.171E+05	335.6	295.0	4.874	.1931	2.532E+04	1.329E+01	7.051E-04
4.137E+05	335.3	295.0	4.885	.1985	2.075E+04	1.094E+01	7.317E-04
3.103E+05	334.9	295.0	4.868	.2054	1.625E+04	8.751E+00	7.699E-04
2.068E+05	330.2	295.0	4.855	.2150	1.167E+04	6.316E+00	8.255E-04
1.034E+05	321.7	295.0	4.756	.2315	6.846E+03	3.659E+00	8.848E-04
RUN NO. 012223, ZPG-AW, 1.778 M STATION, KISTLER BALANCE							
1.034E+06	332.4	294.4	4.850	.1939	5.218E+04	2.186E+01	5.689E-04
9.308E+05	334.0	294.4	4.846	.1966	4.732E+04	2.015E+01	5.810E-04
8.274E+05	336.3	294.4	4.844	.1997	4.229E+04	1.828E+01	5.923E-04
7.239E+05	336.6	294.4	4.846	.2031	3.754E+04	1.640E+01	6.082E-04
6.205E+05	335.9	294.4	4.836	.2068	3.302E+04	1.456E+01	6.251E-04
5.171E+05	337.8	294.4	4.839	.2118	2.788E+04	1.258E+01	6.491E-04
4.137E+05	337.0	294.4	4.845	.2177	2.295E+04	1.040E+01	6.746E-04
3.103E+05	336.4	294.4	4.836	.2254	1.794E+04	8.295E+00	7.122E-04
2.068E+05	333.8	294.4	4.823	.2364	1.278E+04	6.052E+00	7.712E-04
1.034E+05	327.0	294.4	4.794	.2561	7.251E+03	3.620E+00	9.018E-04
RUN NO. 012224, ZPG-AW, 1.981 M STATION, KISTLER BALANCE							
1.034E+06	333.4	295.0	4.852	.2075	5.551E+04	2.149E+01	5.604E-04
9.308E+05	338.3	295.0	4.849	.2110	4.968E+04	1.982E+01	5.728E-04
8.019E+05	338.4	295.0	4.858	.2154	4.348E+04	1.733E+01	5.858E-04
7.239E+05	336.3	295.0	4.842	.2179	4.038E+04	1.608E+01	5.942E-04
6.205E+05	338.2	294.7	4.847	.2227	3.499E+04	1.415E+01	6.128E-04
5.171E+05	337.9	294.7	4.843	.2281	2.995E+04	1.225E+01	6.345E-04
4.137E+05	338.9	294.7	4.850	.2352	2.452E+04	1.009E+01	6.567E-04
3.103E+05	338.3	294.4	4.839	.2441	1.923E+04	8.116E+00	6.983E-04
2.068E+05	336.3	294.4	4.822	.2571	1.373E+04	5.924E+00	7.547E-04
1.034E+05	326.4	293.9	4.741	.2788	8.097E+03	3.464E+00	8.280E-04
RUN NO. 012231, ZPG-AW, 2.134 M STATION, KISTLER BALANCE							
1.034E+06	334.0	294.4	4.845	.2164	5.790E+04	2.141E+01	5.551E-04
9.308E+05	339.6	294.4	4.837	.2200	5.173E+04	1.984E+01	5.678E-04
8.274E+05	334.6	294.4	4.832	.2226	4.777E+04	1.800E+01	5.775E-04
7.239E+05	337.8	294.4	4.831	.2269	4.195E+04	1.615E+01	5.919E-04
6.205E+05	340.3	294.4	4.832	.2318	3.628E+04	1.421E+01	6.077E-04
5.171E+05	336.7	294.4	4.827	.2367	3.149E+04	1.217E+01	6.224E-04
4.137E+05	338.6	293.9	4.830	.2439	2.568E+04	1.014E+01	6.497E-04
3.103E+05	337.2	293.9	4.826	.2528	2.013E+04	8.059E+00	6.866E-04
2.068E+05	336.1	293.9	4.814	.2659	1.427E+04	5.899E+00	7.466E-04
1.034E+05	327.1	293.9	4.725	.2876	8.378E+03	3.502E+00	8.269E-04
RUN NO. 012232, ZPG-AW, 2.286 M STATION, KISTLER BALANCE							
1.034E+06	331.0	294.4	4.815	.2248	6.185E+04	2.156E+01	5.450E-04
9.308E+05	335.8	294.4	4.812	.2287	5.535E+04	1.979E+01	5.557E-04
8.274E+05	334.1	294.4	4.823	.2321	5.012E+04	1.800E+01	5.736E-04
7.239E+05	336.1	294.4	4.811	.2364	4.444E+04	1.612E+01	5.815E-04
6.205E+05	333.2	294.4	4.801	.2406	3.951E+04	1.415E+01	5.910E-04
5.171E+05	335.7	293.9	4.800	.2468	3.337E+04	1.220E+01	6.112E-04
4.137E+05	335.4	293.9	4.816	.2543	2.734E+04	9.910E+00	6.281E-04
3.103E+05	334.1	293.9	4.797	.2636	2.159E+04	7.931E+00	6.601E-04
2.068E+05	329.2	293.9	4.772	.2767	1.4E+04	5.821E+00	7.132E-04
1.034E+05	320.6	294.4	4.726	.3005	9.051E+03	3.450E+00	8.151E-04



TABLE 6 NOL BOUNDARY LAYER CHANNEL SKIN FRICTION DATA

PO N/M2	TO DEG.K	TW DEG.K	MPW	THP CM	RTHPW	TAUW N/M2	CF
RUN NO. 011060, ZPG-MHT, 1.524 M STATION, KISTLER BALANCE							
1.034E+06	408.3	295.0	4.947	.2308	4.257E+04	2.432E+01	6.824E-04
9.308E+05	415.6	295.0	4.943	.2389	3.861E+04	2.251E+01	6.998E-04
8.274E+05	424.4	295.0	4.946	.2486	3.449E+04	2.071E+01	7.258E-04
7.239E+05	422.2	295.6	4.941	.2567	3.149E+04	1.866E+01	7.446E-04
6.205E+05	422.2	295.6	4.939	.2671	2.812E+04	1.640E+01	7.623E-04
5.171E+05	422.2	295.6	4.940	.2802	2.456E+04	1.414E+01	7.895E-04
4.137E+05	425.6	295.6	4.939	.2979	2.064E+04	1.188E+01	8.280E-04
3.103E+05	424.4	295.6	4.925	.3202	1.681E+04	9.473E+00	8.715E-04
2.068E+05	427.8	295.6	4.907	.3563	1.241E+04	6.928E+00	9.426E-04
1.034E+05	424.4	295.6	4.821	.4213	7.716E+03	4.100E+00	1.044E-03
RUN NO. 012215, ZPG-MHT, 1.524 M STATION, KISTLER BALANCE							
1.034E+06	406.4	295.6	4.904	.2292	4.340E+04	2.466E+01	6.696E-04
9.308E+05	408.1	295.6	4.902	.2360	3.998E+04	2.272E+01	6.844E-04
8.274E+05	419.9	295.6	4.901	.2462	3.543E+04	2.093E+01	7.086E-04
7.239E+05	423.3	295.6	4.896	.2556	3.186E+04	1.889E+01	7.278E-04
6.205E+05	423.6	296.1	4.899	.2663	2.837E+04	1.654E+01	7.457E-04
5.171E+05	423.3	296.1	4.900	.2792	2.481E+04	1.414E+01	7.651E-04
4.137E+05	423.2	296.1	4.900	.2959	2.104E+04	1.175E+01	7.949E-04
3.103E+05	423.4	296.1	4.884	.3184	1.708E+04	9.431E+00	8.405E-04
2.068E+05	423.4	296.1	4.865	.3531	1.274E+04	6.857E+00	9.029E-04
1.034E+05	423.6	296.1	4.823	.4211	7.731E+03	4.001E+00	1.020E-03
RUN NO. 011040, ZPG-MHT, 1.778 M STATION, KISTLER BALANCE							
5.171E+05	422.2	295.6	4.925	.2988	2.636E+04	1.301E+01	7.180E-04
4.137E+05	425.0	295.6	4.924	.3179	2.222E+04	1.089E+01	7.504E-04
3.103E+05	423.3	295.6	4.922	.3425	1.808E+04	8.766E+00	8.043E-04
2.068E+05	422.2	295.6	4.894	.3798	1.359E+04	6.504E+00	8.761E-04
1.034E+05	423.3	295.6	4.821	.4532	8.335E+03	3.959E+00	1.008E-03
RUN NO. 012214, ZPG-MHT, 1.778 M STATION, KISTLER BALANCE							
1.034E+06	421.7	295.6	4.858	.2465	4.488E+04	2.357E+01	6.176E-04
9.308E+05	421.1	295.6	4.859	.2534	4.159E+04	2.163E+01	6.303E-04
8.274E+05	423.4	296.1	4.858	.2620	3.792E+04	1.975E+01	6.465E-04
7.239E+05	422.8	296.1	4.856	.2712	3.446E+04	1.760E+01	6.577E-04
6.205E+05	423.8	296.7	4.854	.2828	3.071E+04	1.560E+01	6.786E-04
5.171E+05	423.2	296.7	4.855	.2967	2.689E+04	1.343E+01	7.023E-04
4.137E+05	423.7	296.7	4.860	.3152	2.275E+04	1.110E+01	7.283E-04
3.103E+05	423.4	296.7	4.848	.3396	1.851E+04	8.908E+00	7.717E-04
2.068E+05	423.4	296.7	4.837	.3777	1.379E+04	6.532E+00	8.418E-04
1.034E+05	423.0	296.7	4.810	.4524	8.375E+03	3.924E+00	9.897E-04
RUN NO. 108041, ZPG-MHT, 1.778 M STATION, NOL BALANCE							
1.034E+06	419.8	297.2	4.859	.2461	4.511E+04	2.303E+01	6.038E-04
9.294E+05	426.3	297.2	4.857	.2547	4.099E+04	2.114E+01	6.155E-04
8.274E+05	424.9	297.8	4.858	.2624	3.776E+04	1.877E+01	6.146E-04
7.239E+05	423.3	297.8	4.857	.2714	3.439E+04	1.704E+01	6.372E-04
6.205E+05	420.2	298.3	4.862	.2820	3.093E+04	1.476E+01	6.464E-04
5.171E+05	419.3	298.3	4.864	.2959	2.710E+04	1.282E+01	6.748E-04
4.137E+05	423.3	298.9	4.861	.3151	2.278E+04	1.060E+01	6.958E-04
3.089E+05	423.4	298.9	4.848	.3400	1.845E+04	8.513E+00	7.406E-04
2.068E+05	423.2	298.9	4.840	.3778	1.379E+04	5.861E+00	7.570E-04
1.007E+05	421.7	299.4	4.804	.4548	8.257E+03	3.426E+00	8.838E-04

TABLE 6 NOL BOUNDARY LAYER CHANNEL SKIN FRICTION DATA

PO N/M2	TO DEG.K	TW DEG.K	MPW	THP CM	RTHPW	TAUW N/M2	CF
RUN NO. 108024, ZPG-MHT, 1.778 M STATION, NOL BALANCE							
1.034E+06	418.1	299.4	4.870	.2460	4.515E+04	2.366E+01	6.260E-04
9.294E+05	423.6	299.4	4.867	.2544	4.115E+04	2.152E+01	6.319E-04
8.294E+05	427.4	298.9	4.870	.2633	3.742E+04	1.969E+01	6.491E-04
7.226E+05	424.1	300.0	4.865	.2720	3.419E+04	1.767E+01	6.661E-04
6.205E+05	428.3	300.0	4.871	.2846	3.016E+04	1.546E+01	6.817E-04
5.192E+05	425.8	300.0	4.873	.2978	2.662E+04	1.322E+01	6.982E-04
4.130E+05	421.8	300.0	4.869	.3150	2.279E+04	1.111E+01	7.351E-04
3.103E+05	423.1	300.6	4.859	.3399	1.846E+04	8.652E+00	7.563E-04
2.068E+05	422.7	300.6	4.845	.3778	1.379E+04	6.483E+00	8.405E-04
1.014E+05	423.4	300.6	4.819	.4555	8.217E+03	3.931E+00	1.019E-03
RUN NO. 012213, ZPG-MHT, 1.981 M STATION, KISTLER BALANCE							
1.034E+06	421.9	295.6	4.864	.2567	4.657E+04	2.332E+01	6.137E-04
9.308E+05	422.5	295.6	4.863	.2643	4.308E+04	2.142E+01	6.260E-04
8.274E+05	423.6	295.6	4.859	.2731	3.947E+04	1.953E+01	6.397E-04
7.239E+05	423.3	296.1	4.857	.2830	3.586E+04	1.749E+01	6.541E-04
6.205E+05	423.4	296.1	4.858	.2952	3.205E+04	1.528E+01	6.672E-04
5.171E+05	423.2	296.1	4.860	.3103	2.806E+04	1.306E+01	6.857E-04
4.137E+05	423.6	296.1	4.858	.3297	2.385E+04	1.093E+01	7.158E-04
3.103E+05	423.2	296.7	4.855	.3563	1.939E+04	8.696E+00	7.572E-04
2.068E+05	423.4	296.7	4.840	.3974	1.449E+04	6.363E+00	8.219E-04
1.034E+05	423.3	296.7	4.803	.4777	8.857E+03	3.754E+00	9.422E-04
RUN NO. 011050, ZPG-MHT, 2.134 M STATION, KISTLER BALANCE							
5.171E+05	421.7	295.0	4.890	.3209	2.881E+04	1.287E+01	6.911E-04
4.137E+05	422.2	295.0	4.893	.3417	2.446E+04	1.075E+01	7.230E-04
3.103E+05	422.2	295.6	4.882	.3696	1.993E+04	8.696E+00	7.738E-04
2.068E+05	425.6	295.6	4.859	.4138	1.484E+04	6.433E+00	8.435E-04
1.034E+05	422.2	295.6	4.794	.4958	9.267E+03	3.959E+00	9.867E-04
RUN NO. 012212, ZPG-MHT, 2.134 M STATION, KISTLER BALANCE							
1.034E+06	423.1	295.0	4.855	.2640	4.790E+04	2.336E+01	6.102E-04
9.308E+05	422.6	295.0	4.852	.2716	4.448E+04	2.141E+01	6.203E-04
8.274E+05	422.8	295.0	4.847	.2805	4.090E+04	1.951E+01	6.333E-04
7.239E+05	423.4	295.0	4.848	.2913	3.706E+04	1.748E+01	6.487E-04
6.205E+05	423.4	295.6	4.846	.3040	3.317E+04	1.530E+01	6.616E-04
5.171E+05	423.3	295.6	4.845	.3197	2.910E+04	1.313E+01	6.807E-04
4.137E+05	423.2	295.6	4.841	.3399	2.479E+04	1.093E+01	7.063E-04
3.103E+05	423.4	295.6	4.832	.3679	2.017E+04	8.751E+00	7.490E-04
2.068E+05	423.4	295.6	4.810	.4104	1.517E+04	6.406E+00	8.083E-04
1.034E+05	423.5	295.6	4.782	.4957	9.270E+03	3.802E+00	9.388E-04
RUN NO. 108032, ZPG-MHT, 2.134 M STATION, NOL BALANCE							
1.034E+06	416.9	302.2	4.889	.2634	4.818E+04	2.145E+01	5.756E-04
9.308E+05	424.7	302.2	4.891	.2735	4.389E+04	2.005E+01	5.987E-04
8.274E+05	429.4	302.2	4.885	.2838	3.967E+04	1.832E+01	6.127E-04
7.239E+05	425.7	302.2	4.885	.2933	3.640E+04	1.626E+01	6.213E-04
6.226E+05	423.7	302.2	4.885	.3053	3.281E+04	1.445E+01	6.422E-04
5.185E+05	423.7	302.2	4.882	.3210	2.877E+04	1.219E+01	6.487E-04
4.144E+05	423.4	302.2	4.880	.3414	2.451E+04	1.026E+01	6.819E-04
3.123E+05	423.7	302.8	4.874	.3691	2.000E+04	8.408E+00	7.383E-04
2.055E+05	423.6	302.8	4.865	.4140	1.482E+04	5.846E+00	7.752E-04
1.027E+05	424.9	302.8	4.860	.5032	8.915E+03	3.648E+00	9.637E-04

TABLE 6 NOL BOUNDARY LAYER CHANNEL SKIN FRICTION DATA

PO N/M2	TO DEG.K	TW DEG.K	MPW	THP CM	RTMPW	TAUW N/M2	CF
RUN NO. 108031, ZPG-MHT, 2.134 M STATION, NOL BALANCE							
1.033E+06	420.9	298.9	4.882	.2644	4.771E+04	2.248E+01	6.008E-04
9.232E+05	425.7	298.9	4.876	.2739	4.352E+04	2.083E+01	6.196E-04
8.267E+05	425.1	299.4	4.875	.2822	4.025E+04	1.884E+01	6.256E-04
7.219E+05	426.3	299.4	4.874	.2934	3.639E+04	1.694E+01	6.438E-04
6.191E+05	425.9	300.0	4.875	.3060	3.259E+04	1.484E+01	6.577E-04
5.171E+05	427.1	300.0	4.871	.3219	2.856E+04	1.268E+01	6.709E-04
4.137E+05	426.9	300.0	4.872	.3425	2.431E+04	1.050E+01	6.952E-04
3.089E+05	426.7	300.6	4.860	.3707	1.977E+04	8.360E+00	7.342E-04
2.068E+05	427.5	300.6	4.855	.4144	1.479E+04	6.339E+00	8.281E-04
1.014E+05	425.0	300.6	4.819	.5015	8.994E+03	3.791E+00	9.827E-04
RUN NO. 012211, ZPG-MHT, 2.286 M STATION, KISTLER BALANCE							
1.034E+06	408.9	295.0	4.828	.2651	5.137E+04	2.340E+01	5.990E-04
9.308E+05	411.4	295.0	4.824	.2736	4.737E+04	2.149E+01	6.089E-04
8.274E+05	422.2	295.0	4.820	.2861	4.229E+04	1.965E+01	6.249E-04
7.239E+05	423.9	295.6	4.819	.2975	3.825E+04	1.755E+01	6.372E-04
6.205E+05	422.8	295.6	4.818	.3103	3.436E+04	1.544E+01	6.532E-04
5.171E+05	422.2	295.6	4.819	.3264	3.018E+04	1.320E+01	6.709E-04
4.137E+05	422.8	295.6	4.817	.3477	2.568E+04	1.090E+01	6.916E-04
3.103E+05	423.7	295.6	4.812	.3772	2.086E+04	8.646E+00	7.285E-04
2.068E+05	422.6	296.1	4.788	.4209	1.576E+04	6.368E+00	7.895E-04
1.034E+05	418.9	296.1	4.747	.5069	9.802E+03	3.762E+00	9.035E-04
RUN NO. 110191, ZPG-CW, 1.524 M STATION, NOL BALANCE							
1.034E+06	426.7	90.0	4.968	.2771	4.718E+04	3.885E+01	1.109E-03
9.308E+05	431.1	90.0	4.960	.2854	4.317E+04	3.642E+01	1.147E-03
8.274E+05	422.2	90.0	4.956	.2914	4.059E+04	3.369E+01	1.190E-03
7.239E+05	424.4	90.0	4.961	.3022	3.644E+04	3.019E+01	1.224E-03
6.205E+05	418.3	90.0	4.967	.3125	3.297E+04	2.660E+01	1.264E-03
5.171E+05	422.2	90.0	4.961	.3281	2.850E+04	2.289E+01	1.299E-03
4.137E+05	420.6	89.4	4.959	.3464	2.425E+04	1.921E+01	1.361E-03
3.103E+05	421.1	88.9	4.937	.3717	1.966E+04	1.545E+01	1.434E-03
2.068E+05	425.2	87.8	4.922	.4125	1.441E+04	1.131E+01	1.557E-03
1.034E+05	423.3	87.8	4.871	.4874	8.769E+03	6.291E+00	1.665E-03
RUN NO. 110181, ZPG-CW, 1.778 M STATION, NOL BALANCE							
1.034E+06	424.4	90.0	4.922	.2845	4.986E+04	3.864E+01	1.063E-03
9.308E+05	425.6	90.0	4.917	.2927	4.606E+04	3.612E+01	1.101E-03
8.274E+05	428.9	90.0	4.914	.3028	4.188E+04	3.299E+01	1.128E-03
7.239E+05	421.1	90.0	4.916	.3112	3.877E+04	2.934E+01	1.148E-03
6.205E+05	420.6	90.0	4.919	.3241	3.462E+04	2.606E+01	1.193E-03
5.171E+05	424.4	90.0	4.919	.3413	2.994E+04	2.283E+01	1.254E-03
4.137E+05	423.3	90.0	4.915	.3613	2.551E+04	1.909E+01	1.307E-03
3.103E+05	423.3	88.9	4.899	.3890	2.074E+04	1.517E+01	1.368E-03
2.068E+05	427.5	88.9	4.886	.4339	1.527E+04	1.113E+01	1.490E-03
1.034E+05	421.1	87.8	4.836	.5143	9.476E+03	6.718E+00	1.730E-03
RUN NO. 110141, ZPG-CW, 1.981 M STATION, NOL BALANCE							
1.034E+06	419.4	91.7	4.885	.2892	5.249E+04	3.639E+01	9.735E-04
9.308E+05	426.1	91.7	4.902	.3003	4.747E+04	3.338E+01	1.005E-03
8.274E+05	424.4	91.7	4.899	.3094	4.380E+04	3.098E+01	1.047E-03
7.239E+05	423.3	91.1	4.902	.3205	3.982E+04	2.785E+01	1.079E-03
6.171E+05	421.7	90.6	4.895	.3339	3.568E+04	2.442E+01	1.104E-03
5.171E+05	419.4	90.0	4.895	.3494	3.157E+04	2.092E+01	1.128E-03
4.137E+05	422.2	88.9	4.891	.3721	2.666E+04	1.757E+01	1.181E-03
3.103E+05	422.2	88.9	4.886	.4020	2.165E+04	1.417E+01	1.264E-03
2.068E+05	418.3	88.9	4.874	.4462	1.635E+04	1.058E+01	1.403E-03
1.034E+05	422.2	88.9	4.830	.5378	9.992E+03	6.320E+00	1.620E-03

TABLE 6 NOL BOUNDARY LAYER CHANNEL SKIN FRICTION DATA

PO N/M2	TO DEG.K	TW DEG.K	MPW	THP CM	RTHPW	TAUW N/M2	CF
RUN NO. 110131, ZPG-CW, 2.134 M STATION, NOL BALANCE							
1.036E+06	418.9	91.7	4.861	.2924	5.3 2E+04	3.716E+01	9.739E-04
9.308E+05	424.4	91.7	4.908	.3047	4.834E+04	3.457E+01	1.046E-03
8.274E+05	420.6	91.1	4.906	.3135	4.491E+04	3.198E+01	1.087E-03
7.239E+05	424.4	90.6	4.903	.3266	4.039E+04	2.891E+01	1.120E-03
6.205E+05	426.7	90.0	4.899	.3415	3.586E+04	2.554E+01	1.151E-03
5.171E+05	422.2	89.4	4.895	.3574	3.195E+04	2.223E+01	1.199E-03
4.137E+05	427.2	89.4	4.887	.3819	2.690E+04	1.876E+01	1.256E-03
3.103E+05	427.8	88.9	4.866	.4130	2.197E+04	1.487E+01	1.307E-03
2.068E+05	432.8	88.9	4.859	.4643	1.621E+04	1.107E+01	1.451E-03
1.034E+05	412.8	88.9	4.794	.5470	1.060E+04	7.206E+00	1.796E-03
RUN NO. 110151, ZPG-CW, 2.286 M STATION, NOL BALANCE							
1.034E+06	426.7	91.7	4.823	.2989	5.424E+04	3.783E+01	9.641E-04
9.308E+05	431.1	91.7	4.876	.3114	4.888E+04	3.457E+01	1.020E-03
8.274E+05	422.2	91.7	4.868	.3186	4.612E+04	3.093E+01	1.021E-03
7.239E+05	423.3	91.7	4.849	.3305	4.204E+04	2.785E+01	1.035E-03
6.205E+05	421.7	91.1	4.857	.3450	3.771E+04	2.478E+01	1.081E-03
5.171E+05	418.3	90.0	4.846	.3615	3.351E+04	2.137E+01	1.110E-03
4.137E+05	418.3	88.9	4.846	.3851	2.856E+04	1.766E+01	1.146E-03
3.103E+05	422.2	88.9	4.837	.4190	2.306E+04	1.405E+01	1.206E-03
2.068E+05	422.2	88.9	4.820	.4691	1.733E+04	1.025E+01	1.303E-03
1.034E+05	422.2	88.9	4.818	.5706	1.056E+04	6.263E+00	1.590E-03

TABLE 7 NOL BOUNDARY LAYER CHANNEL HEAT TRANSFER DATA

PO N/M2	TO DEG.K	TW DEG.K	MPW	THP CM	RTHPW	Q W/M2	ST89
RUN NO. 012211, ZPG-MHT, 1.524 M STATION							
1.034E+06	409.1	295.0	4.904	.2299	4.306E+04	1.595E+03	2.314E-04
9.308E+05	411.4	295.0	4.902	.2368	3.959E+04	1.516E+03	2.380E-04
8.274E+05	422.5	295.0	4.901	.2468	3.517E+04	1.581E+03	2.509E-04
7.239E+05	423.7	295.6	4.896	.2557	3.182E+04	1.459E+03	2.621E-04
6.205E+05	423.0	295.6	4.899	.2661	2.841E+04	1.266E+03	2.678E-04
5.171E+05	421.4	295.6	4.900	.2787	2.493E+04	1.041E+03	2.683E-04
4.137E+05	422.8	295.6	4.900	.2958	2.106E+04	8.598E+02	2.735E-04
3.103E+05	423.7	295.6	4.884	.3185	1.707E+04	6.807E+02	2.826E-04
2.068E+05	422.6	296.1	4.865	.3528	1.277E+04	4.878E+02	3.039E-04
1.034E+05	419.1	296.1	4.823	.4192	7.829E+03	2.859E+02	3.553E-04
RUN NO. 012221, ZPG-MHT, 1.778 M STATION							
1.034E+06	406.4	295.6	4.858	.2427	4.688E+04	1.514E+03	2.192E-04
9.308E+05	408.1	295.6	4.859	.2500	4.316E+04	1.443E+03	2.280E-04
8.274E+05	419.9	295.6	4.858	.2611	3.829E+04	1.537E+03	2.422E-04
7.239E+05	423.3	295.6	4.856	.2714	3.441E+04	1.441E+03	2.513E-04
6.205E+05	423.6	296.1	4.854	.2827	3.073E+04	1.227E+03	2.501E-04
5.171E+05	423.3	296.1	4.856	.2967	2.688E+04	1.040E+03	2.554E-04
4.137E+05	423.2	296.1	4.861	.3150	2.279E+04	8.383E+02	2.586E-04
3.103E+05	423.4	296.1	4.848	.3396	1.851E+04	6.606E+02	2.684E-04
2.068E+05	423.4	296.1	4.838	.3777	1.379E+04	4.798E+02	2.900E-04
1.034E+05	423.6	296.1	4.810	.4527	8.362E+03	2.970E+02	3.499E-04
RUN NO. 012214, ZPG-MHT, 1.981 M STATION							
1.034E+06	421.7	295.6	4.864	.2566	4.660E+04	1.831E+03	2.284E-04
9.308E+05	421.1	295.6	4.863	.2639	4.324E+04	1.683E+03	2.343E-04
8.274E+05	423.4	296.1	4.859	.2730	3.949E+04	1.562E+03	2.401E-04
7.239E+05	422.8	296.1	4.857	.2829	3.592E+04	1.381E+03	2.438E-04
6.205E+05	423.8	296.7	4.858	.2953	3.201E+04	1.215E+03	2.496E-04
5.171E+05	423.2	296.7	4.860	.3103	2.806E+04	1.007E+03	2.499E-04
4.137E+05	423.7	296.7	4.858	.3298	2.384E+04	8.120E+02	2.504E-04
3.103E+05	423.4	296.7	4.855	.3564	1.937E+04	6.403E+02	2.631E-04
2.068E+05	423.4	296.7	4.840	.3974	1.449E+04	4.602E+02	2.803E-04
1.034E+05	423.0	296.7	4.803	.4775	8.865E+03	2.871E+02	3.403E-04
RUN NO. 012213, ZPG-MHT, 2.134 M STATION							
1.034E+06	421.9	295.6	4.855	.2637	4.804E+04	1.810E+03	2.234E-04
9.308E+05	422.5	295.6	4.852	.2716	4.448E+04	1.675E+03	2.282E-04
8.274E+05	423.6	295.6	4.847	.2808	4.080E+04	1.560E+03	2.356E-04
7.239E+05	423.3	296.1	4.848	.2913	3.707E+04	1.383E+03	2.410E-04
6.205E+05	423.4	296.1	4.846	.3040	3.317E+04	1.193E+03	2.419E-04
5.171E+05	423.2	296.1	4.845	.3196	2.910E+04	9.935E+02	2.420E-04
4.137E+05	423.6	296.1	4.841	.3400	2.477E+04	8.131E+02	2.461E-04
3.103E+05	423.2	296.7	4.832	.3677	2.020E+04	6.254E+02	2.529E-04
2.068E+05	423.4	296.7	4.810	.4104	1.517E+04	4.516E+02	2.681E-04
1.034E+05	423.3	296.7	4.782	.4956	9.275E+03	2.795E+02	3.245E-04
RUN NO. 012212, ZPG-MHT, 2.286 M STATION							
1.034E+06	422.9	295.0	4.828	.2691	4.942E+04	1.899E+03	2.258E-04
9.308E+05	422.6	295.0	4.824	.2770	4.592E+04	1.759E+03	2.323E-04
8.274E+05	422.8	295.0	4.820	.2862	4.222E+04	1.600E+03	2.366E-04
7.239E+05	423.4	295.0	4.819	.2974	3.830E+04	1.424E+03	2.390E-04
6.205E+05	423.4	295.6	4.818	.3105	3.431E+04	1.224E+03	2.409E-04
5.171E+05	423.3	295.6	4.819	.3268	3.009E+04	1.023E+03	2.421E-04
4.137E+05	423.2	295.6	4.817	.3479	2.565E+04	8.218E+02	2.429E-04
3.103E+05	423.8	295.6	4.812	.3772	2.086E+04	6.419E+02	2.506E-04
2.068E+05	423.4	295.6	4.788	.4213	1.573E+04	4.700E+02	2.705E-04
1.034E+05	423.5	295.6	4.747	.5094	9.680E+03	2.843E+02	3.157E-04

TABLE 7 NOL BOUNDARY LAYER CHANNEL HEAT TRANSFER DATA

PO N/M2	TO DEG.K	TW DEG.K	MPW	THP CM	RTHPW	Q W/M2	ST89
RUN NO. 110141, ZPG-CW, 1.524 M STATION							
1.034E+06	421.1	91.7	4.967	.2756	4.794E+04	8.262E+03	3.380E-04
9.308E+05	426.1	91.7	4.965	.2842	4.372E+04	7.803E+03	3.505E-04
8.274E+05	424.4	91.7	4.961	.2922	4.027E+04	7.205E+03	3.641E-04
7.239E+05	423.3	91.1	4.966	.3020	3.649E+04	6.444E+03	3.738E-04
6.171E+05	421.7	90.6	4.962	.3137	3.258E+04	5.686E+03	3.861E-04
5.171E+05	419.4	90.0	4.962	.3273	2.872E+04	4.945E+03	4.019E-04
4.137E+05	422.8	88.9	4.962	.3473	2.407E+04	4.225E+03	4.250E-04
3.103E+05	423.3	88.9	4.952	.3731	1.944E+04	3.413E+03	4.535E-04
2.068E+05	418.9	88.9	4.940	.4108	1.459E+04	2.538E+03	5.048E-04
1.034E+05	421.7	88.9	4.881	.4872	8.782E+03	1.600E+03	6.034E-04
RUN NO. 110131, ZPG-CW, 1.778 M STATION							
1.036E+06	418.9	91.7	4.900	.2822	5.104E+04	8.103E+03	3.148E-04
9.308E+05	423.3	91.7	4.895	.2913	4.668E+04	7.627E+03	3.253E-04
8.274E+05	420.6	91.1	4.890	.2995	4.319E+04	7.042E+03	3.379E-04
7.239E+05	423.3	90.6	4.889	.3110	3.886E+04	6.435E+03	3.500E-04
6.205E+05	424.4	90.0	4.899	.3246	3.446E+04	5.731E+03	3.652E-04
5.171E+05	422.2	89.4	4.899	.3398	3.032E+04	5.043E+03	3.866E-04
4.137E+05	426.7	89.4	4.893	.3616	2.545E+04	4.319E+03	4.082E-04
3.103E+05	427.8	88.9	4.876	.3897	2.064E+04	3.497E+03	4.328E-04
2.068E+05	432.8	88.9	4.862	.4349	1.517E+04	2.596E+03	4.721E-04
1.034E+05	412.2	88.9	4.804	.5078	9.821E+03	1.566E+03	5.645E-04
RUN NO. 110151, ZPG-CW, 1.981 M STATION							
1.034E+06	426.7	91.7	4.902	.2920	5.117E+04	8.158E+03	3.131E-04
9.308E+05	430.6	91.7	4.902	.3016	4.690E+04	7.790E+03	3.296E-04
8.274E+05	422.2	91.7	4.899	.3087	4.407E+04	7.051E+03	3.403E-04
7.239E+05	423.3	91.7	4.900	.3204	3.985E+04	6.349E+03	3.497E-04
6.205E+05	421.1	91.1	4.905	.3335	3.577E+04	5.579E+03	3.609E-04
5.171E+05	417.8	90.0	4.899	.3490	3.168E+04	4.815E+03	3.728E-04
4.137E+05	418.3	88.9	4.898	.3709	2.689E+04	4.045E+03	3.893E-04
3.103E+05	417.8	88.9	4.891	.4004	2.188E+04	3.316E+03	4.235E-04
2.068E+05	422.2	88.9	4.880	.4483	1.614E+04	2.508E+03	4.722E-04
1.034E+05	423.3	88.9	4.855	.5399	9.785E+03	1.608E+03	5.916E-04
RUN NO. 110191, ZPG-CW, 2.134 M STATION							
1.034E+06	425.0	90.0	4.902	.2959	5.218E+04	8.366E+03	3.204E-04
9.308E+05	431.1	90.0	4.900	.3065	4.750E+04	7.860E+03	3.299E-04
8.274E+05	423.3	90.0	4.897	.3141	4.469E+04	7.003E+03	3.349E-04
7.239E+05	424.4	90.0	4.895	.3262	4.049E+04	6.166E+03	3.356E-04
6.205E+05	420.6	90.0	4.894	.3391	3.662E+04	5.325E+03	3.405E-04
5.171E+05	422.8	90.0	4.894	.3576	3.191E+04	4.652E+03	3.554E-04
4.137E+05	420.0	89.7	4.889	.3792	2.742E+04	3.938E+03	3.758E-04
3.103E+05	421.7	88.9	4.866	.4104	2.234E+04	3.224E+03	4.005E-04
2.068E+05	425.0	87.8	4.845	.4598	1.663E+04	2.448E+03	4.437E-04
1.034E+05	423.0	87.8	4.805	.5537	1.027E+04	1.551E+03	5.463E-04
RUN NO. 110181, ZPG-CW, 2.286 M STATION							
1.034E+06	423.3	90.0	4.827	.2980	5.466E+04	8.835E+03	3.190E-04
9.308E+05	425.0	90.0	4.875	.3094	4.969E+04	8.032E+03	3.342E-04
8.274E+05	427.8	90.0	4.857	.3201	4.559E+04	7.279E+03	3.339E-04
7.239E+05	422.8	90.0	4.854	.3305	4.203E+04	6.505E+03	3.434E-04
6.205E+05	420.6	90.0	4.855	.3445	3.795E+04	5.702E+03	3.531E-04
5.171E+05	423.3	90.0	4.856	.3639	3.296E+04	4.949E+03	3.658E-04
4.137E+05	423.3	90.0	4.853	.3875	2.811E+04	4.141E+03	3.820E-04
3.103E+05	423.3	88.9	4.839	.4197	2.297E+04	3.358E+03	4.067E-04
2.068E+05	426.7	88.9	4.829	.4718	1.708E+04	2.521E+03	4.514E-04
1.034E+05	421.1	87.8	4.794	.5682	1.067E+04	1.580E+03	5.532E-04